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I

THE EXTENSION OF HIGH-SCHOOL INFLUENCE[1]

Tho the high school and the elementary school have many things in common, yet it is conceded that in many ways they are far apart. There are many reasons for these differences, to three of which I wish to call attention:

The first is that the pupils in the high school, considered collectively, are mentally, morally, and physically different from the pupils in the elementary school. The elementary school is in the main concerned with children while the high school is in the main concerned with adolescents, and each school must adapt itself to the needs of the pupils it serves.

A second reason for the present conditions is the belief that the elementary school must be largely a finishing school. The briefest mention of statistics will at once establish the fact that for most pupils the course of study should be preparatory for world experiences and not preparatory for high-school work.

The third is that a school reflects the civilization of its time and is the product, and not the cause, of the social and industrial conditions which surround it. One widely prevalent community conviction which finds reflection in the school is that the amount of education desirable and necessary for those, who on account of financial limitations must have the least, is approxi-

[1] The fourteenth annual meeting of the Harvard Teachers' Association was held at Harvard University on Saturday, March 18, 1905. The papers and discussions were upon the topics "The extension of high-school influence over the last six years of the secondary school work" and "The transition from the school to the college."

mately represented by the amount attainable by the time the child is fourteen years of age. The entrance into adolescence was marked by special rites in many nations long before they had schools. Religion, tradition, and necessity have created a public belief which has been crystallized in legislation for compulsory attendance until the age of fourteen. Even where this legislation has not been enacted, the rejection has been for financial, and not for educational reasons. In accordance with this general community belief the elementary schools of America have attempted to build up a course which shall be complete in itself and which shall cover the eight or nine years of school life ending with fourteen.

Bearing in mind these three causes for existing conditions, namely: (1) the necessity of adapting each school in the main to pupils of very different characteristics, (2) the necessity of a complete rather than a preparatory course for most pupils in the elementary school, and (3) the common acceptance of compulsory education to the age of fourteen,—let us consider how far we can extend the influence of the high school into the elementary school and what advantage will arise from such extension.

It is best to inquire what it is that we propose to extend. Five possible lines of extension present themselves for consideration:

1. The extension of high-school methods of study and instruction.

2. The extension of high-school methods of discipline and school management.

3. The extension of high-school methods of organization, by which I mean, primarily, departmental teaching.

4. The extension of high-school subjects of study; that is, the enrichment of the present elementary-school course.

5. The extension of the high-school name; that is, the establishment of a six-year elementary school followed by a six-year high school.

First, should high-school methods of study and instruction find greater place in the elementary school than they now do? We hear from the high schools much complaint about the

preparation offered in the elementary schools. Many a high-school teacher, otherwise sane, makes bitter protests concerning the deficiencies of the pupils in the entering class. She prepares lists of mistakes which the pupils make in grammar and submits these as supposedly incontrovertible proof that the teaching in grammar has been deficient. The elementary teacher replies in kind and claims that the rapid falling off in numbers of the freshman high-school class is caused, not by inefficient preparation in the elementary school, but by the entire lack of adaptability of high-school teaching to the needs of the pupils. For my own part, I deprecate such folly. The real difficulty lies in the fact that neither recognizes the necessary differences of method of study and instruction. Tho these are the teachers who have greatest need to stand together, they stand back to back and face in opposite directions. The one, having risen by reason of superior merit thru various elementary grades to the highest, looks back to her experience in these grades for her inspiration in methods. She often fails to recognize the changing nature of the children as she advances from grade to grade, and so continues dogmatic and didactic teaching beyond its time. The other, placed in the lowest high-school grade because she is the most recent arrival from college, looks forward to the upper high-school classes and to her own experience as a student in college. She knows what the pupil will need to make that same journey, and so expects and demands an amount of self-initiated and self-sustained effort of study quite beyond the ability of the child. What the schools need is to have these teachers face about, clasp each other's hands, smile into each other's faces, read the intensity of purpose shining from each other's eyes, and then for each to look over the shoulder of the other at the problems which lie behind.

What I have said of the teachers applies, tho less intensively perhaps, to the principals. Both the principal of the high school and the principal of the elementary school decry the great chasm between the one school and the other. In fact, were the chasm less abysmal it would long since have been filled by the volumes written in protest against it. Yet the elementary principal wants to bridge it by continuing his own methods and his

own ideals thruout the high-school course, and I suspect that our program to-day is the result of a high-school man's belief that the remedy lies in the extension of high-school ideals into the grades.

This condition arises from a failure to perceive that in education we are dealing with changing material. Each principal is infected with the organization bacillus. In the elementary school the principal organizes his school thruout on the same plan, and because most of the pupils are in the lower grades the methods of instruction and of discipline best suited to these become the ideals of the school. Similarly the high-school principal, because his pupils are for the most part adolescents, builds up a system adapted to the needs of adolescents.

Tho in individual cases such extreme attitudes may not prevail, yet the schools as a whole represent these conditions. I rejoice in the belief that thru the discussions of recent years both sides are more willing to recognize that the adolescent period is one for which, in methods of study at least, there is a period of preparation. The boy of eleven accepts much on faith. The boy of fourteen has entered into the realm of doubt. His mental habits have changed, but unfortunately the school often makes no changed demand upon him, nor does it allow of any change which he himself originates. Thus in June he leaves a school dominated by one ideal to enter in September a school dominated by a different ideal. He finds methods which, tho better adapted to his future needs, are nevertheless most troublesome to him because he has had little previous preparation for them. It seems to me, therefore, that the greatest good may come from modifications of the upper grades of the elementary school to the extent that the pupil may be given more practice in learning to study, more confidence in his ability to work alone, more power in controlling his own activities, more ability in forming opinions of his own, and greater facility in expressing and defending them.

Second, this discussion of the extension of high-school methods of study and instruction into the elementary school might with equal propriety be applied to methods of discipline. The child of five accepts dictation and requires assistance in the

management of his conduct. The man of eighteen, either openly or secretly, resents both. He wants some share in the management of his own conduct even before he graduates. In fact, his success in being responsible for his own conduct after he leaves school depends to some extent upon his having had some practice in controlling himself while yet in school. To be sure we cannot say that the elementary school fails to furnish such training, nor that the high school always does give training in self-control. Here also we should have a gradual change, determined by the needs of the children and not by some plan of organization or administration. As the child grows in power of self-control, the opportunities for exercising it should be increasingly greater. Such elementary schools as fail in this, by reason of maintaining the disciplinary methods of the lower grades too long, would be benefited by a larger application of the disciplinary ideals prevailing in most high schools.

Two years ago I completed an investigation of the causes of withdrawal from school. From the results obtained I am led to believe that the elementary schools fail more largely in this respect than they are aware. I spare you a description of the method and quote only the summary.

"The causes of withdrawal from the earlier years of the course and from the later years were quite different. Causes which affected high-school pupils began in or near the seventh grade. Excluding those who left to work and those who left on account of ill health, the causes which took the others from school may be grouped into those which produced their greatest effect before the seventh or eighth grade, and those which are either prominent here, or begin here and remain effective during the the high-school course. In this latter class we find dislike for authority, truancy, failure in work, indifference to school work, desire for activity, and attendance at private schools. A consideration of these causes for withdrawal leads to the conclusion that both in methods of discipline and in methods of study and instruction, the seventh and eighth grades, as at present organized and conducted, fail to meet the needs of the large number of pupils."

Third, shall we extend to the elementary school the departmental organization now prevalent in high schools? Tho the faults of the departmental system of organization are well known, yet it is the general consensus of opinion that the purposes of the high school are better accomplished by departmental teaching than under a system of general or room teachers. We have, therefore, so organized most of our high schools, and the tendency is more and more in that direction. It follows, therefore, that in so far as it will be found desirable to extend high-school methods of study and instruction and high-school methods of discipline and management into the elementary schools, to that extent will the departmental system be of value and assistance. Those elementary schools in which the two upper grades have been organized on the departmental system, have found that it has materially aided in establishing the methods of study and of discipline which I have already suggested as desirable in those grades.

I desire now to point out that the changes in the elementary school which I have thus far suggested, tho apparently based upon the need of preparing the pupils for the high school, have just as great a justification for the pupils who are to leave school. In fact it is vastly more important that the boy who must earn his living at fourteen be sent into the world with the ability to study by himself, to overcome difficulties without help, to have some initiative and originality in thought, and to be able to exercise a reasonable and sane control over his own actions. These are the things which are the most utilitarian of all, and however loudly we may shout for the necessity of maintaining the elementary school as a finishing school, we must not let this lead us into substituting inconsequential results—accomplished under direction—for training which shall give some modicum of ability to direct one's self in the attaining of real results.

My point is that both for pupils who are going to the high school and more especially for those who are not, the elementary school will do well to incorporate some methods of instruction, study, and discipline which are now more prevalent in high schools than in elementary schools, and that these changes,

tho involving some difficulties, yet lie easily within the possibility of accomplishment by any able elementary-school principal.

The *fourth* question is the incorporation of high-school studies in the elementary-school course. Here the chief difficulty arises because the addition of anything to an already heavily laden elementary-school course demands that we first take something out. A complete discussion would involve the entire question of waste in the elementary schools and the complete reorganization of the elementary-school curriculum. Such omissions and reorganization will be difficult because they will encounter a sturdy opposition based upon the belief that the subjects now in use are better adapted to the purpose of the elementary school as a finishing school than are those which it is proposed to insert. I am of the opinion that the issue must be met upon these lines, and that however desirable it may be to have the elements of some high-school subject disposed of before the pupil comes to the high school, this is nevertheless not a sufficient reason for its introduction into the elementary school. Unless a subject is the one most valuable to the pupils who are not going to the high school, it has no business in the elementary school.

This statement by no means rules algebra and foreign language out of the elementary school, for I am not willing to admit that those subjects are most valuable to a pupil which seem to have the most direct application to his future business. I admit that a foolish belief exists among people that ten weeks of bookkeeping will make a great financier. Nevertheless, I am convinced that the boy who learns from two years of Latin and algebra in the elementary school that there is no hope for to-morrow until you have done thoroly the work of to-day, is better prepared for success in business than if he has given the time to commercial arithmetic and bookkeeping.

I would therefore extend the high-school subjects into the upper grades of the elementary school because they are better adapted to the kind of study and instruction which pupils of that age should receive, and I would defend them on the ground that they are more desirable and necessary for pupils who are to leave school early than they are for pupils who may later,

in the high school, have the chance to obtain the training they furnish.

Fifth, shall we extend the high-school name; that is, shall we have an elementary course of six years followed by a six-years high-school course? Such a division would conflict with the principle that the pupils should have a complete course ending with fourteen. If a division is made between the work of the first six years and the last two or three, these last years become but fractional parts of the secondary-school course. Now they are part and parcel of the elementary course now accepted as a reasonable minimum of education necessary for all; but if these last years were separated from the others, they would become extra or additional years from which many would try to escape.

Furthermore, there is abundance of experience to show that for the best results and largest attendance you must take education to the people, and not the people to the education. It is important, therefore, that the extension of high-school influence should be made in as large a number of places as possible, so that it may reach the largest possible number of pupils. A larger number of pupils will be reached by extending the high-school influence to every grammar school, than by bringing the upper grades together in a single school.

If the upper grades are to remain distributed thruout the various grammar schools, I fail to see what advantage can come from renaming the upper part. It will but create an artificial break where there should be none, and will divide into parts the elementary course, which should be in itself complete.

Neither can we with success place these upper grades under different supervision. The grammar-school principal must be left in charge of all the work conducted in his building. Upon his ability to adapt the work of the upper grades to the needs of the children must we depend for progress in the extension of high-school influence along the lines which have been named as desirable.

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II

THE PRACTICABILITY OF THE EXTENSION OF HIGH-SCHOOL INFLUENCE

Whether any line of school work is practical or not depends on the point of view. The interpretations are as varied as the people who discuss the question, each one interpreting for himself. In the end it comes to about this, "What I wish to do is practical, from my point of view; what you wish is impracticable if it conflicts with what I wish to do." Is not this the test generally applied in determining such questions?

The working out of a longer secondary course always meets objections more or less difficult to overcome. Some of us have had difficulty in extending the course from three to four years, and the further extension to six years will come only after long consideration. We cannot develop any one plan of organization that will be generally applicable, for in working out any school problem the varying conditions demand different solutions. So, in presenting a plan for this longer high-school course, I shall consider the conditions appertaining to most cities of moderate size. We must all take as our starting point our own system of schools with its limitations, and develop from this in accordance with the local conditions. No limitations, however, should deter us from the work of improving the quality of our secondary-school work.

Those of us who are familiar with boys and girls at the ages between twelve and fifteen have a feeling that the organization of our grammar schools, bringing together as it does all ages from seven to fifteen, and in some buildings from five to fifteen, does not permit the right sort of training, as all are likely to be handled in a way suited to younger pupils, and therefore weakening to the older ones. The best we have done in these schools is, as Mr. Brooks has expressed it, to strike an average in our methods of handling. Granting no

more freedom, and requiring no more individual initiative in the one case than in the other is decidedly detrimental in its effect upon the adolescent and does not make for strong, vigorous mental maturity. We cannot require the same amount or the same kind of work in the studies pursued, and we ought not to expect the same kind of handling. For this reason, as has been pointed out, there is the desirability of extending high-school influence, high-school method to children who have reached the age of twelve years.

I have heard it stated, and it appears occasionally in the papers, that this tendency means abolishing the grammar school—the people's college, as some like to call it. This clipping from a recent issue of one of our educational papers shows that some superintendents of schools even are looking toward the abolishing grammar grades as such. "Supt. ——'s plan of abolishing the eighth grade in the grammar schools has been partially adopted by the school board. During the next term the pupils beginning eighth-grade work in three of the city's schools will be moved to the high school. If this work is satisfactory, the plan will be extended to all the schools." Almost any one of us could predict the result of such a plan. If we look at the conditions in any one city that is growing in population, we cannot fail to see that such a plan would of necessity prove a failure, because it would transfer to schools already large so many pupils that the high school would be swamped and the work hopelessly crippled.

There is still another plan for bringing high-school influence and method to children at an earlier age, that of passing them thru the grades more rapidly. Various ways of putting this plan into execution have been suggested. But they all have the disadvantage of bringing the children at too early and too immature an age for proper appreciation to the more advanced subjects of the upper grades of the high school.

These various attempts that have been made to solve the problem show that the desirability for some reform is felt, and that different men are attacking it in different ways. It has seemed to me that the readjustment of the grammar school, and not its abolishment, or its abridgment, is what is needed,

and in considering such readjustment I have in mind the organization common to most of our suburban cities; numerous primary schools scattered at frequent intervals thru the city, several of these promoting their children to one grammar school. These grammar buildings are few in number, depending largely on geographic conditions, and they in turn feed the one central high school.

The high school is an expensive plant, with an expensive equipment, more so than that of any grammar school, and if we plan to increase largely our attendance, we must make extensive additions to an expensive plant. This costly equipment is, however, largely in the laboratories and libraries designed for the use of the higher grades. The work of the first year of the high school is not necessarily much more expensive than the last year in the grammar school. If we find it necessary on account of local conditions to make a dividing line between grades, it may be made anywhere below the third year of the high school, when the usè of such equipment is more important. But it is far better if no permanent division line between elementary and secondary school be made, other than that secondary education should begin as early as twelve years of age.

So far as continuity of work is concerned, it should not make any difference whether the ninth grades are associated with the high school in its building, or whether the tenth are with the ninth in the grammar buildings; the method of handling is the important thing. But in any case, the course of study should be continuous and reasonably complete from the first grade thru the thirteenth, and let the movable dividing line between buildings come where it may, between grades eight and nine, or between ten and eleven.

In all except the manufacturing cities it is becoming pretty general for seventy to ninety per cent. of the children completing the elementary course to continue in the high school. In my own schools it has varied between these limits, seldom, however, falling below eighty per cent. As the majority take a high-school course, there is all the more reason for a consideration of the organization that shall make the transition from grade to grade as easy as possible.

Mr. Brooks spoke of abolishing the name "high school." We speak of the "grades" and the "high school" as if they were to be distinguished and differentiated, and, by this difference in name, we keep the artificial distinction that leads children to feel that they have finished and laid aside one thing, and taken up a new when they advance from the ninth to the tenth grade. School boards intensify this feeling by giving a diploma stating that the children have "completed" a course of study, whereas they have finished only a part of it (if it is a course worthy of the name). I know from experience that by abolishing the grammar-school diploma and relabeling the high school, so that it is simply grades ten, eleven, twelve, and thirteen of the public-school system, we have brought about a better feeling—a feeling that it is as natural and proper to pass from the ninth to the tenth grade, as it was from the seventh into the eighth. When such diploma was given at the end of the ninth grade, fewer pupils continued their course in the high school. They received their diploma and went away satisfied. Is there any valid reason for giving a diploma at this period rather than at the end of the sixth or eighth, or any other grade? Again, the high-school classes are known in many institutions by the college names of freshman, sophomore, junior, and senior. This fact, altho a small matter, tends to mark and to emphasize the difference that is felt between the grades and its own classes, and to make an educational aristocracy of the high school, widening the gap, rather than lessening it.

The more extended utilization of our expensive high-school plant has been so much before the public the past few years that we may now consider the further utilization of our high-school force. Are they exerting as powerful an influence as their education and training lead us to expect? Here is a clipping from the *Journal of education* of last week:

"High-school teachers are liable to miss a great opportunity. Educational drifting is soon to cease. Selfish life, or living for one's self, will soon be a thing of the past among all school men and women. Teachers will group themselves along lines of class consciousness, and whoever is not so placed will be adrift

without rudder or chart. High-school teachers are most liable to miss their privileges and sacrifice their power.

" High-school teachers are the best educated. They must be, as a college equipment or an ample equivalent is indispensable. This is not true of any other class of public-school workers. The high-school teacher therefore represents a high grade of scholastic preparation, and as such should be distinctively a leader in the community, notably in the profession.

" They often do not magnify their place as educators, but merely as scholars and teachers of a specialty in their own school. They are rarely present with hearty attention upon general or local teachers' meetings in which questions, professional rather than scholastic, are discussed. They are less liable to be active in church, social, or fraternal life. More liable to sit in a seat above the rank and file of teachers, and sometimes than that of the superintendent himself. There are notable exceptions, but they are exceptions.

" High-school teachers owe much to the profession and to the community. Their tenure is usually more secure than that of the superintendent, their pay is greater than that of the grade-school principal or teacher. To them more has been given, and of them more will be required. Unless this is early and noticeably true, the public and professional support of the high schools will be discounted or there will be a wholesale shifting in the personnel of the high schools."

The principals and teachers of high schools have certainly an opportunity to influence greatly the work of any city. They can do as much to help on the educational work of the community as the superintendent can, only in a different way. The deplorable fact is that they do not always do it. But it has always been my experience that when the way to aid has been pointed out, these teachers are responsive and ready to help.

Many of our grammar schools are now conducted on the departmental plan similar to that of the high school. This is a growing tendency in the higher grades, and it lends itself to our scheme of enlarging the sphere of influence of our best educated teachers, those of the high school. The subjects of

study in the elementary school should fit easily and naturally into those of the high school, otherwise there is a waste of energy. Who is there in the school department so well equipped in education, in knowledge of the requirements of subject, as the head of a department in the high school? It seems to me only natural that the head of the department of history should have charge of his specialty thruout the whole system. The same may be said of the departments of modern languages, Latin, mathematics, nature study, and English literature. All of these departments are represented in the lower grades, why should not the one who has charge of them in the high school also have control in all grades, that the subjects may have an harmonious treatment from beginning to end?

It may seem as if this recommendation, that high-school teachers take charge of and supervise the lower work, would add a great load to teachers already sufficiently burdened. But there are various ways in which a person may supervise—he may direct the classroom teaching—he may plan outlines for others to follow—he may be the adviser on matters pertaining to the teaching of his subject. This last is the form of supervision exercised by the heads of departments in the Medford schools. It may seem to many an inadequate supervision, but it has been proved by experience to be sufficient. No small city can afford to allow sufficient time from teaching for the head of a department to supervise in the lower grades by much personal visitation. In fact it would not be desirable for him to do so; for, with the many special teachers and supervisors who now visit the grammar schools, the regular teacher is in danger of being over-supervised, and deprived of all opportunity for individuality and initiative. But when the grammar school teachers meet with the superintendent to discuss the subjects they are teaching, the high-school teachers should be there too. When, for instance, the subject of mathematics (algebra and arithmetic) in the grammar school is under discussion, the mathematical teachers of the high school should also be present. In this way teachers of both classes of school, as well as the superintendents, get and give much help and information. By such meetings the influence of the high school may

Grade	VIII	IX	X	XI	XII	XIII
Language	English Grammar German	English Grammar German Latin	Latin German French	Latin Greek German French	Latin Greek German French	Latin Greek German French
Mathematics	Arithmetic Geometry	Algebra Arithmetic	Algebra Geometry	Algebra Geometry	Bookkeeping Commercial Arithmetic	Solid Geometry Trigonometry
History	English Literature History Geography	English Literature History Physical Geography	English Literature History	English Literature History	English Literature History	English Literature History
Science	Physics Woodwork Drawing	Physics Woodwork Drawing	Botany Physiology Woodwork Drawing	Zoölogy Physics Drawing	Chemistry Physics Geology Commercial Geography Drawing	Chemistry Astronomy Drawing
Culture	Gymnastics Music Composition	Ditto	Ditto	Ditto	Ditto	Ditto
Length of Periods	30 minutes	30 minutes 40 minutes	40 minutes	40 minutes	40 minutes	40 minutes

be extended thru all the grades of the grammar school. If there is a syllabus to be made for the teaching of any special subject, like history, the head teacher of the subject should, in conference with the grammar teachers and the superintendent, prepare it.

You are all undoubtedly familiar with the six-year course outlined for high schools, by Professor Hanus in his recent book, *A modern school.* Following the form used there, I give here a tabulation of the course pursued in our own schools that you may make the comparison and see for yourself that it is possible to administer such a course without having all the classes under one roof, and that called a high school.

Consider the mathematical group for a moment. In the seventh grade there has been much work in arithmetic and a little in geometry, the latter being an assembling of the facts of form learned thru several years in connection with the drawing and manual training. This is followed in the eighth grade by geometry of a type similar to the syllabus prepared for the schools of New York City. With this introduction the children are prepared to take up algebra seriously in the ninth grade.

Latin is begun in the ninth grade by all pupils fitting for college, in the tenth by all others who elect the subject. But an opportunity is offered earlier to begin a foreign language. German has been selected for our schools rather than French because, as only one language could be given, the choice was made by the parents who wished their children to study a modern language, the result being largely in favor of German. The study is begun in the seventh grade, so that pupils have two years of a modern language before they begin Latin. It is purely optional with the parents whether their children study any foreign language, ancient or modern. The introduction of German into the course came about in this way. It was found, about seven years ago, that a large number of children sought dismission frequently to take lessons in private classes, and an investigation in one grammar building discovered between thirty and forty who were studying French or German privately. A circular to the parents, asking if they would like

to have either one of these languages taught in connection with the school work, brought affirmative replies from so many that a teacher who could speak the chosen language was secured for one of the grade rooms, and, as teaching in that building was departmental, she was able to form classes in the seventh, eighth, and ninth grades. Later other buildings requested the same instruction, till we had provided all our buildings with teachers who could handle German, and this without extra cost (a very important point in the mind of taxpayers). From fifty to seventy per cent. of the pupils begin German, and when the ninth grade is reached, we find that the number has decreased but little. It has, however, reduced the number electing Latin in the ninth grade.

These few remarks will give an idea of the management of this course of study. The heads of departments direct the work in their specialty in all grades by conference with the teachers. Such conferences are not necessarily frequent, but are called whenever there seems to be a necessity for them. Pupils choose between subjects in the high school rather than between courses. Below the tenth grade German and Latin are the only subjects that are elective, the latter taking the place of physical geography and English grammar in the ninth. But, beginning with the tenth grade, English is the only required subject. Elective subjects have given much greater satisfaction to our community than the old form of required courses. And there is this to recommend the principle, that if pupils are taking subjects that parents consider useless and impractical, the responsibility rests where it belongs, with the parent and not with the school.

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III

THE ST. LOUIS PHILOSOPHICAL MOVEMENT[1]

In this year of grace 1904, while St. Louis is drawing all the world hither to witness the material progress of the Mississippi Valley for the past hundred years, it may be well to recall the fact that a quarter of a century ago the city was known over the entire thinking world as one of the leading centers of idealistic philosophy—as the home of a vigorous philosophical school and of the *Journal of speculative philosophy*.

The history of this intellectual movement, whose growth, culmination, and decline occupied about twenty-five years, is well worth preserving, not only as a record of the past, but as an inspiration for the future. It is a remarkable fact that in a booming western city—almost on the borders of civilization—apparently wholly occupied with material things, there should come together a group of idealistic philosophers whose enthusiastic and devoted work should carry the name of St. Louis all over the world of thought, and should form one of the most powerful influences opposing the agnostic materialism of Herbert Spencer, which was then sweeping everything before it.

The leading personality in this movement was William Torrey Harris, at that time connected with the St. Louis schools, first as instructor, then as principal, and finally as superintendent, and at present United States Commissioner of Education; and while there were several other brilliant, profound, and original minds which inspired, aided, continued, and also criticised his work, yet the movement began with his coming to St. Louis, centered in his activity while here, and ended soon after his definite departure.

It was in 1857 that Mr. Harris, then a young man fresh from Yale College, established himself in St. Louis as a

[1] Reprinted, with slight changes, from the *Bulletin of the Washington University Association* (St. Louis, Mo., 1904).

teacher of shorthand. His spare moments were occupied with the study of philosophy—mainly in the eclectic form presented in the works of Cousin, and he had come somewhat under the influence of the New England Transcendentalists. "As early as 1856," writes Dr. Harris, "I had begun to read Oriental literature, but had not seized its essential spirit. I had looked for the same diversity of points of view that I was accustomed to in modern philosophy. Cousin's analysis of the Oriental systems, as well as other histories of philosophy, had confirmed me in this mistaken path,"[2] Dr. Harris had already, before coming to St. Louis, begun the study of Kant's *Critique of pure reason.* It was while engaged in these desultory studies that an accidental meeting with a young German, Henry C. Brockmeyer, Lieutenant Governor of Missouri from 1876 to 1880, determined the trend of his mind towards Hegel as the greatest of German philosophers.

Governor Brockmeyer may be styled the inspirer, the Socrates of the movement, as Dr. Harris was its propagator, its Plato. Brockmeyer was born in 1828, and came to America when only sixteen years old. Totally ignorant of the language, he was obliged to make his way by manual labor. Coming West, he settled in St. Louis, and worked for several years in a tannery. Here, in true German fashion, he saved money to complete his education, and entered as a student in Georgetown College, Kentucky. He devoted himself especially to Greek and logic, becoming quite proficient in these studies, in which, however, he was interrupted in a rather unusual fashion. The president of the college gave a course of lectures on the evidences of Christianity, and having asked his audience to question him at the conclusion of one of his lectures, the young Brockmeyer took him literally at his word, and pushed him so hard that the poor president expelled him. But some of Brockmeyer's friends among the trustees interesting themselves in his behalf, the sentence was at his request

[2] The above and several other extracts are taken from Dr. Harris's preface to his work on *Hegel's Logic*, which contains a brief but interesting intellectual autobiography; and to this the reader is referred for further information.

changed to honorable dismissal, and he proceeded to Brown University, to pursue further his quest of learning.

It was at Georgetown, however, that a passage from Plato, read in his Greek course, had determined him to the study of philosophy. I give Brockmeyer's translation of the passage, which is the advice of Parmenides to the young Socrates: "But if you start with a determination of this kind, you ought not only to consider what follows from a proposition, but you ought to add, besides, what follows if you assume the opposite. For example, in relation to the proposition, 'the Many is,' you have to investigate what happens to the Many in reference to itself and in reference to the One. And also what happens to the One in reference to itself and in reference to the Many. *This* is to be considered. Again it is to be considered—supposing the Many is *not*—what follows in that case for the One and for the Many—both considered by themselves and in opposition to each other. Just such questions are to be considered in regard to identity and non-identity, rest and motion, beginning and ceasing to be, and in reference to being and nothing themselves: what each is by itself, and what the relation is when one or the other is assumed. Exercising yourself in this perfectly, you will learn to cognize the Essential. But be sure to educate and practice yourself in this 'useless' and by the masses so called 'metaphysical hair-splitting' while you are still young, lest the Truth should escape you."

"This advice," Brockmeyer says, "stuck in my mind—I knew it by heart—the more I thought of it the more it seemed to be the only thing to follow. It was the path of pure thought. While I was at Brown I searched for some philosopher among the moderns who carried this out. Happening upon Hedge's *German prose writers,* I was directed to Hegel, and found that his *Unabridged logic* was the greatest modern effort in the direction of pure thought. The world since the classic days has made its chief progress in the conquest of material nature. And why? Simply because mankind has been furnished by the Greeks and Arabs with a perfect instrument—mathematics, the basis of mechanics and of all the physical sciences. By means of this perfect instrument all

the advances have been made. And they have been so rapid because *it* is so perfect. What professor of mathematics has to justify his science before his scholars? But how is it with the higher modes of human activity? We are little if anything ahead of the Greeks, simply because the instrument for the transmission of pure thought—logic—made practically no progress towards perfection from the days of Aristotle to those of Hegel. And tho Hegel has by no means done all, he has accomplished more than anyone else.

"When I learned all I wanted at Brown, I came West in 1852, and settled in Warren County, Missouri, the old hunting ground of Daniel Boone. Here I built myself a log cabin, and with my dog as sole companion, I lived for several years, supporting myself by hunting. I did this because with my gun I could procure in an hour enough food for the day, and have the rest of the time for working out the thoughts in my head.

"However, as time passed, I changed my plans. I resolved to have a farm, that should better occupy me with manual labor when my mind was too tired to think clearly, and should provide me with competency in my old age. But this required money, and so I returned to St. Louis and got employment in Bridge, Beach & Co.'s stove foundry. I lived on almost nothing and saved the rest. One Sunday in 1858 I chanced to drop into a meeting held in the old Mercantile Library—Smaller Hall. Those present were discussing Oriental theosophy, spiritualism, or something of that sort. The secretary of that meeting was a young man named Harris, who seemed to me to be the one sane person of the gathering. After the meeting I accosted him and began to question him as we walked along. He seemed surprised that such a common workingman as I appeared to be should talk in this way, and we got into a discussion. He made some quotation from Cousin, and I remarked that Cousin contradicted himself on every page. On his challenging this statement I accompanied him to his room to prove it from Cousin's works. This was the beginning of our friendship, and the nucleus of the group of students that soon gathered together."

Dr. Harris writes of him:[3] "Mr. Brockmeyer, whose acquaintance I had made in 1858, is and was even at that time a thinker of the same order of mind as Hegel, and before reading Hegel, except a few pages in Hedge's *German prose writers* (at Brown University), had divined Hegel's chief ideas and the position of his system, and informed me on my first acquaintance with him in 1858 that Hegel was the great man among modern philosophers, and that his larger *Logic* was the work to get. I sent immediately to Germany for it and it arrived late in the year. Mr. Brockmeyer's deep insights and his poetic power of setting them forth with symbols and imagery furnished me and my friends of those early years all of our outside stimulus in the study of German philosophy. He impressed us with the practicality of philosophy, inasmuch as he could flash into the questions of the day, and even into the questions of the moment, the highest insights of philosophy and solve their problems. Even the hunting of wild turkeys or squirrels was the occasion for the use of philosophy. Philosophy came to mean with us, therefore, the most practical of all species of knowledge. We used it to solve all problems connected with school teaching and school management. We studied the dialectic of politics and political parties and understood how measures and men might be combined by this light. But our chief application of philosophy was to literature and art."

In 1858 a group of three or four young men used to go over to Brockmeyer's room on Seventh and Plum streets in the evenings, after his return from the foundry, and there listen to his readings in Plato's *Dialogues* and to his brilliant expositions as he lay stretched out on his narrow cot, resting from the day's heavy toil. Among this group, besides Harris, were George Stedman and James Sumner. A year later a systematic study of Hegel began in St. Louis. Governor Brockmeyer says that these enthusiastic young men wished him to cease working in the foundry and give his time to instructing them and to translating the great works of German thought. But his mind was full of his farming scheme, and in 1859 he

[3] From his Preface to *Hegel's Logic*.

purchased some land in Warren County, built himself a log cabin, and began farming with no other companion but his faithful dog. Here Harris came out to visit him.

A severe attack of congestive chills, in which Brockmeyer's life was saved only by Harris's bringing him back to town, put an end for a time to the hermit life. Three of the enthusiastic group of young philosophers, Stedman, Watters, and Harris, clubbed together and out of their slender means paid for Brockmeyer's support while he should translate the greater *Logic* of Hegel for their use and edification. The rough draft of this entire translation was actually made and partially revised. It was the intention to have it published in the Bohn Library, which had lately brought out Kant's *Critique of pure reason*. But the commencement of the civil war, of which the first storm-center was in Missouri, interfered with this arrangement and broke up the little band of philosophers.

Brockmeyer, seeing that his idea of "farming with no other helpmate but a dog" was not feasible, took unto himself a wife and returned to Warren County. As he expresses it, "When I got married I could no longer hold myself aloof from the world of reality—the family, civil society, and the state—and think my own thoughts. I felt I must do my part. But the world of reality just then had no government—was indeed a state of chaos, and so I must help to save it by the only means left—by force. I organized a regiment of militia and was chosen its lieutenant colonel. I said to them: 'Whoever wants to join the armies in the field—North or South—let him do it. That is a matter for his own conscience. But here, in this out of the way place, acts of violence, robbery, and slaughter, will in no way affect the general result, but will only destroy our own homes and families. Hence our business is to make this quarter of Missouri peaceful, and keep it a place where civilized beings can live.'"

By this practical application of "the dialectic," backed by an iron will and infinite tact, Brockmeyer kept that section of the distracted State in a condition of comparative quiet until the crisis was over; and then the people of Warren County

sent him to the legislature, "to help reconstruct the world of reality which they had saved."

In the meantime Harris remained in St. Louis, becoming more and more prominent in educational circles and pursuing undaunted his study of German philosophy and its application to art, education, and every-day life. On two visits to Mr. Brockmeyer's residence in Warren County, in 1861, he wrote out the whole of Brockmeyer's translation of Hegel's *Phaenomenologie des Geistes.*

Dr. Harris writes that in December, 1858, "I obtained my insight into the true inference from Kant's *Transcendental* æsthetic. . . In 1895 I worked out my refutation of Sir William Hamilton's *Law of the conditioned.* . . In 1863 I arrived at the insight which Hegel has expressed in his *Für-sich-seyn* or being for itself, which I called and still call independent being. I did not obtain this insight by study of Hegel's *Logic,* however, but rather by following out the lines of thought begun in 1858. . . For this insight cannot be borrowed from another, it is itself an original insight, because it is and must be a seeing at first hand of the necessity of all existence of whatever character to be grounded in self-determined being. All dependent being is a part of independent being; and all independent being is self-determined being. The absolute is not, therefore, an empty absolute, an indeterminate being, but it is determined. It is not determined thru another, but thru itself. If there is no independent being there is no dependent being. If there is not self-determined being there is no being whatever.

"It was in 1864 that I obtained an insight into the logical subordination of fate to freedom—the totality of conditions cannot have a fate outside it, but must be spontaneous in itself, and self-determined—hence all fate and changes not spontaneous must be secondary and derivative from a higher source that is free. In 1866 I arrived at the first insight that is distinctively Hegelian and the most important aperçu of Hegel's *Logic.* . . I called it the distinction between comprehension (or *Begriff*), and Idea (*Idee*). It should really be the distinction that Hegel makes between negative unity or substantiality

and *Begriff* or *Idee*. It is undoubtedly Hegel's highest thought. It is the insight into the nature of true being to be altruistic and to exist in the self-activity of others. It is the thought that lies at the basis of the doctrine of the Trinity, tho rather as a logical implication than as a conscious idea. It is also the highest goal of the Platonic-Aristotelian system—indicated in the assertion that God is without envy (the *Timæus* and the *Metaphysics*), also in the doctrine of the Good as the highest category. This thought is not reached in its pure form by Plato or Aristotle, but rather in its ethical form—as it is the very fountain source of ethics. Hegel's originality consists in seeing for the first time the pure-thought form of this doctrine.

"In 1866 I for the first time read thru Hegel's larger *Logic*, reading it in the English translation that had been made for myself and two other friends (George Stedman and J. H. Watters) by Henry C. Brockmeyer in 1859 and 1860. I copied the work entire from the manuscript, and am sure I read every word of it. But I am equally sure that I did not understand at the most anything beyond the first part of the first volume and could not follow any of the discussions in the second and third volumes, or even remember the words from one page to another. It was all over my head, so to speak. I had of course, made myself acquainted with the categories and subcategories of the work years before, thru histories of philosophy, and was gradually learning to think something into them; but I could make little of Hegel's deductions or discussions of them. This experience of my own, which lasted for years, is, I presume, the experience of other students of Hegel and also of students of any system of deep philosophy. One has first to seize its general thought, its trend as a whole, and gradually descend to its details. The translation which I copied out still exists, but has never been printed, any portion of it."

About this time a new philosophical group began to gather about Dr. Harris as its center. It was quite numerous, and it manifested its activity in many ways. There were at first some meetings for the discussion of art and literature at the house

of Mrs. Beverly Allen, the sister of James A. Yeatman, President of the Western Sanitary Commission, blossoming out finally in the "Art Society," which lasted for several years. There were various semi-public lectures and discussions. But most important were the meetings of the "Philosophical Society."

In January, 1866, at the law office of Mr. Britton A. Hill, Messrs. Brockmeyer, Hill, Howison, Snider, Harris, and Drs. Hall and Watters met and decided to form a Philosophical Society. At the next meeting, January 26, a constitution was adopted and the following officers were chosen: President, Mr. Brockmeyer; vice-presidents, Messrs. Howison and Watters; treasurer, Mr. Hill; and secretary, Mr. Harris. There were three classes of members: Directors (or full members), associates, and auxiliaries (the last named being composed mainly of scientists and philosophers not residing in St. Louis.).[4] The meetings were held first at Mr. Hill's office, then at the houses of Dr. Harris and other members, and finally in a room at the Mercantile Library. As a beginning of the work, Mr. Brockmeyer was requested to read his *Letters on Faust* (a remarkable series of papers that afterwards appeared in the *Journal of speculative philosophy*), but this was postponed in favor of a series of conversations by A. Bronson Alcott, which followed in rapid succession and were attended by many others besides the regular members. Among the topics discussed were the lapse of the soul, religion, friendship,

[4] The following is a full list of the members in the order of their joining the society: Directors—Henry C. Brockmeyer, Wm. T. Harris, Britton A. Hill, G. H. Howison (then professor of mathematics in Washington University), J. Z. Hall, Denton J. Snider, P. L. Tafel, J. H. Watters, C. F. Childs, A. E. Kroeger, T. J. Horner, J. G. Woerner, Nathan Hayward, H. M. Jones, J. A. Martling, C. L. Bernays, H. H. Morgan, and C. E. Michel. Associates—G. V. Bailey, N. Myers, D. V. Potter, A. Strothotte, E. C. Kehr, W. C. Lyman, A. Kukleham, J. F. Madison, Silas Bent, G. E. Goodson, H. Bryan, A. Lowry, W. Flint, J. E. Kimball, G. E. Seymour, D. R. Haynes, G. M. B. Maughs, J. A. Higgins, T. Kimball, Wm. Johnston, W. W. Stickney, T. D. Witt, F. M. Crunden, E. T. Merrick, Edwin Lasseter Bynner, J. L. Pierce, Jno. Eysar, L. J. Block, F. C. Stone, Thomas Davidson, Wm. Berndt, W. C. Ball, F. E. Cook, and F. Louis Soldan (now Superintendent of the St. Louis public schools). Auxiliaries—A. Bronson Alcott, Ralph Waldo Emerson, Jos. de Fonfride (Paris, France), E. A. Hitchcock (Washington, D. C.), N. B. Buford (Colorado), L. W. Reed (California),

generation as a physiological fact, memory, politics, and the characters of Emerson, Thoreau, and Margaret Fuller. After this series, the society continued holding its regular meetings, Mr. Brockmeyer, who was now practicing law in St. Louis, being the leader, until his increasing absorption in politics withdrew him from active participation in the meetings of the society, tho he still remained its president.[5]

Mr. Alcott returned for a second visit in December, 1866, holding several interesting meetings, and Emerson also lectured under the auspices of the society, as did several other distinguished men. Among the subjects discussed at the regular meetings were: Hegel's dialectic; Herbert Spencer; critiques of Hegel; J. F. T. Tafel's philosophy; what is the true actual? motion—pure motion; Goethe's philosophy of colors; Shakspere; the substantiality of the soul or thinking reason; the infinite of the imagination and that of the reason; personality

F. B. Sanborn (Concord, Mass.), John B. Stallo (Cincinnati), J. Eliot Cabot (Brookline, Mass.), Samuel Tyler (Maryland), Vincenzo Botta (New York City), Jos. C. G. Kennedy (Washington), Wm. Galpin, Henry James (Swampscott, Mass.), E. H. Bowman (Illinois), D. A. Wasson (Boston), James Hutchison Stirling (Scotland), A. Vera (Italy), Karl Rosenkranz (Prussia), I. Goddard (Ohio), August Willich (Cincinnati), F. E. Hedge (Massachusetts), C. W. Chapman (New Haven, Conn.), R. T. Colburn (New York City), Friedrich Kapp, Louis Feuerbach, Moritz Carriere, Jacob Bernays (Germany), James B. Eads, Henry T. Blow, Nathaniel Holmes, T. McWhorter, A. J. Dickerhoff, T. J. Sanders, J. H. Fichte (Germany), Chas. Benard (Paris), John Weiss (Massachusetts), C. B. D. Mills (New York), S. J. May (Syracuse, N. Y.), John W. Albee, Chas. C. Baldwin (Worcester, Mass.), E. H. Bugbee (Connecticut), F. H. Peckham (Providence, R. I.), R. R. Bishop (Boston), Benj. Szold (Baltimore), Franz Hoffmann (Germany), T. Collins Simon (England), and Wm. Clay (Detroit).

[5] Mr. Brockmeyer was elected alderman of St. Louis in 1866, and in 1870 State senator, which office he held until 1876, when he became lieutenant governor. He had the greatest part in the convention which framed the Missouri Constitution of 1875, and accepted the nomination for the office of lieutenant governor in order that, as presiding officer of the senate, he might "make the thing work." On the expiration of his term he retired from politics, refusing all offers of nomination which were made him. In 1890, after accumulating a modest fortune he retired from active life, and has since resided in St. Louis, devoting himself almost entirely to philosophical study and writing. Besides some original work and reminiscences, he has made new and careful translations of what he considers Hegel's really important and original works, the *Unabridged logic*, the *Phenomenology*, and the *Psychology*. His aim has been to make in English a vocabulary of the technical terms of pure thought as exact as that which Hegel created in German. At present he is engaged upon a series of notes or commentaries to elucidate this vocabulary, and hopes, if his health permits, to finish the great work and publish it.

as the fundamental principle; the Christ of Christianity; true freedom; the relation of the individual man to society; the correlation of forces; the permanent principle of the universe; *Generatio Equivoca;* and Schopenhauer's *Fourfold root of sufficient reason.* But in January, 1867, occurred the most important event connected with the society, the appearance under its auspices of the first philosophical periodical on this side of the Atlantic—the *Journal of speculative philosophy,* a quarterly review.

The story of its origin may be interesting. At that time the synthetic philosophy of Herbert Spencer was occupying everyone's attention, and not be *au fait* on the Unknowable was commonly considered a mark of crass ignorance. Dr. Harris examined Spencer's work thoroly, and his keen mind, exercised in the subtleties of Kant and Hegel, cut thru the gross fallacies and naïve presuppositions of the popular philosophical idol. A remarkably keen and searching and, at the same time, appreciative article on Herbert Spencer was written by Dr. Harris, read before the Philosophical Society, and sent to the *North American review,* but whether on account of its depth, or because it ran counter to the popular trend, it was refused. Dr. Harris then resolved to have a journal of his own in which to publish this and other articles on philosophy, and which should, by awakening an interest in the masterpieces of pure thought, stem the rising tide of the new materialism.

The motto of the Journal was from Novalis: "Philosophy can bake no bread; but she can procure for us God, freedom, and immortality." And in the preface to the first volume we read: "In what book is one to find the true 'American' type of speculative philosophy? . . . We, as a people, buy immense editions of John Stuart Mill, Herbert Spencer, Comte, Hamilton, Cousin, and others; one can trace the appropriation and digestion of their thoughts in all the leading articles of our reviews, magazines, and books of a thoughtful character. If this is American philosophy, the editor thinks it may be very much elevated by absorbing and digesting more refined aliment. It is said that of Herbert Spencer's works nearly twenty

thousand have been sold in this country, while in England scarcely the first edition has been bought. This is encouraging for the American thinker: what lofty spiritual culture may not become broadly and firmly rooted here where thoughtful minds are so numerous? Let this spirit of inquiry once extend to thinkers like Plato and Aristotle, Schelling and Hegel—let these be digested and organically reproduced—and what a phalanx of American thinkers we may have to boast of! For, after all, it is not 'American *thought*' so much as American *thinkers* that we want. To *think*, in the highest sense, is to transcend all *natural limits*—such, for example, as rational peculiarities, defects in culture, distinctions in race, habits, and modes of living—to be *universal*, so that one can dissolve away the external hull and seize the substance itself. The peculiarities stand in the way; were it not for these, we should find in Greek or German philosophy just the forms we ourselves need. Our province as *Americans* is to rise to purer forms than have hitherto been attained, and thus speak a 'solvent word' of more potency than those already uttered. If this be the goal we aim at, it is evident that we can find no other means so well adapted to rid us of our own idiosyncrasies as the study of the greatest thinkers of all ages and all times. May this *Journal* aid such a consummation!"

L. van Becelaere, in his recent work (1904), *La Philosophie en Amérique*, thus speaks of the *Journal:* Cette revue a eu pour œuvre de vulgariser et d'accréditer les conceptions de l'Idéalisme allemand parmi la société lettrée des Etats-Unis et à ce titre, on pourrait, avec quelque emphase, qualifier le Docteur Harris de patriarche de l'idéalisme germanique en Amérique; car s'il n'en fut le premier introducteur, il a été le plus efficace et le plus persévérant promoteur, dans ce pays."

Of course such a journal could not pay expenses, and Dr. Harris devotedly met the deficit each year from his personal income. As he once said to me, "I live to publish this *Journal.*" The *Journal* continued to appear until 1893, when the increased labors of Dr. Harris as Commissioner of Education obliged him to discontinue it. But its work had been done and well done.

From the beginning a large part consisted of translations from the masters of Greek and German thought made by Dr. Harris and other members of the Philosophical Society, but later on original articles like Harris's *History of philosophy in outline* and essays on art and literature, like Brockmeyer's *Letters on Faust* and Snider's *Lectures on Shakspere* occupied an increasing space. The *Journal* circulated thruout the world of thought, and, as has been said, made the name of St. Louis well known across the ocean. And even at the present time the only English versions of several most important philosophical works are to be found in its volumes." [6]

Up to this year, 1867, the practical application of Dr. Harris's philosophy had been shown in his admirable management of the Clay School, and now, the position of superintendent becoming vacant, he was chosen to fill that office, which he held till his resignation in 1880. Some wiseacres said that the public schools would fall to pieces under a "speculative philosopher whose head was in the clouds"; but Dr. Harris's administration was distinguished particularly by its practi-

[6] Some of the most important of these are:—C. L. Bernays: Schopenhauer's Doctrine of the Will, and Dialogue on Immortality; Schelling's Practical Effects of Modern Philosophy. Wm. M. Bryant: Hegel on Symbolic, Classic, and Romantic Art. H. C. Brockmeyer: Hegel's Phenomenology of Spirit. Thomas Davidson: Leibnitz on the Nature of the Soul, and on Platonic Enthusiasm, Introduction to Hegel's Encyclopedia, Trendelenburg on Hegel's System, Rosenkranz's Summary of Logic, Sentences of Porphyry the Philosopher, Fragments of Parmenides, Grammar of Dionysius Thrax. Hugo Haanel: Herbart's Rational Psychology, Ideas on Education, and Application of Mathematics in Psychology. W. T. Harris: Hegel on the Philosophy of Plato and Aristotle, Hegel's First Principle, and Outlines of Hegel's Phenomenology, Logic, and Science of Rights, Morals, and Religion. F. H. Hedge: Leibnitz's Monadology. A. E. Kroeger: Fichte's Introduction to the Science of Knowledge, Criticism of Philosophical Systems, Sun Clear Statement, New Exposition of the Science of Knowledge, Facts of Consciousness, and Criticism of Schelling; Kant's System of Transcendentalism, Anthropology, and Critique of Pure Reason, Criticised and Explained by Himself; Leibnitz's New System of Nature, Doctrine of Universal Spirit, and Abridgment of the Theodicy. D. J. Snider: Rosenkranz on Goethe's Social Romances, and the Second Part of Faust; Hoffman, Theism and Pantheism. F. L. Soldan: Michelet's Review of Hartman on the Dialectic, and Hartman's Reply to Michelet, Schmidt on Benecke's Educational Psychology, and Hegel on the Absolute Religion. G. Stanley Hall: Rosenkranz on Hegel's Logic, Philosophy of Right, Philosophy of History, Psychology, Æsthetics, Philosophy of Religion, History of Philosophy, Hegel as the National Philosopher of Germany. T. R. Vickroy: Goeschel's Immortality of the Soul.

cality, the same quality which has since marked his administration of the Bureau of Education. He showed himself in the first place a consummate politician, managing a school board—the majority of which was composed of ward politicians—in such a skillful fashion that no "combines" could exist which were not in harmony with his own plans and those of his more intelligent supporters. And the carrying out of these plans soon put the St. Louis schools in the front rank of educational progress. His thirteen annual reports form a valuable contribution to educational literature, and their presentation in the American exhibit at the Paris Exhibition of 1878 gained for Dr. Harris from the French government the honorary title of *Officier de l'Académie*, while in 1889 he received the additional title of *Officier de l'Instruction Publique*.

Dr. Harris also founded the Pedagogical Society, which began its meetings in the directors' room of the Mercantile Library. Here the most thoughtful educators of the city met monthly for the discussion of educational problems. Later, as the society grew in numbers, the meetings were held in the boardroom of the Public School Building. In 1894 the Society was reorganized under a plan drawn up by Dr. William M. Bryant, on the lines of university extension, and is now probably the largest educational organization of the West, numbering upwards of fifteen hundred members.

But probably the most noteworthy educational advance of Dr. Harris's administration was the inauguration of the first public kindergarten in the United States under the direction of Miss Susan E. Blow, in the Blow School, Carondelet. Dr. Harris took the greatest interest in the philosophy and method of Froebel, and joined the kindergarten to the public-school system in spite of a strong opposition to the "new fad"; while it is his influence which has tinged all kindergarten teaching so strongly with Hegelianism.[1]

[1] Dr. Harris in 1899 received from the University of Jena, Germany, the degree of Ph.D. for his work in the Hegelian Philosophy. During the preceding two decades several American universities had conferred upon him similar honorary degrees. He has been a constant contributor on philosophical, pedagogical, and sociological topics to the leading general as well as technical reviews. His most important publications are: *Introduction to the study of philosophy, Hegel's Logic,*

In the early '70's the Philosophical Society gradually ceased to exist—not because of lack of interest, but because of the specialization of the activities of its members in the application of their philosophy. The Art Society continued its activity, holding meetings for the interpretation of masterpieces of sculpture, painting, and music, and giving exhibitions. With this movement, among others more or less identified besides Dr. Harris, were Dr. John Green, Dr. Charles Briggs, Joseph Meeker, Lucien Eaton, Miss M. E. Beedy, Miss S. V. Beeson, Miss Anna C. Brackett, and Dr. William M. Bryant, who, beginning by translating *Hegel's Aesthetic*, for the *Journal*, has continued a prolific writer on æsthetic, philosophical, and educational subjects.[8]

The literary development centered round the High School, whose principal, Mr. H. H. Morgan, a member of the Philosophical Society, began the publication of *The Western*, a monthly journal, assisted by Henry W. Jameson, George B. McClellan, and "Tom" Davidson, as he then signed himself. The particular light of this group was Denton J. Snider, who ranks next to Dr. Harris and Governor Brockmeyer in this movement. He had come to the city at the close of the war as a teacher in the Christian Brothers' College and soon joined the Philosophical Society, and at this time his lectures on the system of Shakspere's dramas attracted general attention. These lectures originated in his class work in the High School (where he became assistant principal), and when written out were first delivered in Mr. Snider's own parlor to audiences of thirty or forty persons—Dr. Harris and other members of the Philosophical Society generally being present. Most of those on the tragedies and comedies were published in the *Journal of speculative philosophy*, and as time went on others on the histories were delivered to large audiences in the Public

The genesis of the categories of the mind, The Spiritual sense of Dante's Divina Commedia, and *Psychologic foundations of education.*

[8] Dr. Bryant is at present instructor in pedagogy to the Kindergarten Normal Class, and head of the department of history in the St. Louis High School. Among his many publications are to be noted, *Hegel's philosophy of art* (translation with introduction); *Philosophy of landscape painting; The World energy and its self-conservation; Life, death, and immortality; Hegel's Educational ideas; Syllabus of psychology; Syllabus of ethics.*

School boardroom. Finally, in 1877, the *System of Shakspere's dramas,* now complete, was published, being the first book which had appeared as a result of the philosophical movement. After a two years' sojourn abroad, which resulted in his *Walk in Hellas,* Mr. Snider returned to St. Louis in 1879, and besides resuming his work in the High School, conducted several classes not only in the works of Shakspere, but in those of Goethe, Dante, and Homer, which he called the "World's Literary Bibles." In 1881 he gave up his residence in St. Louis.[9]

About Thomas Davidson gathered a group who were studying and translating Aristotle, and when he left St. Louis in 1875 the meetings were continued at the houses of Dr. Harris and Dr. F. Louis Soldan. From Aristotle they proceeded to Spinoza, and after Dr. Harris's departure turned their attention to Lotze and later German philosophy. In this group were to be found besides Harris, Davidson, and Soldan,—Dr. C. A. Todd, Dr. D. V. Dean, and Mr. George Class."[10]

The first vice-president of the Philosophical Society, and the representative of the University faculty among its officers, George Holmes Howison, left St. Louis shortly before David-

[9] During the following twenty years Mr. Snider, now doctor of philosophy, conducted classes and gave lectures in different parts of the country, publishing these and other works, and settling at last in Chicago (1894), where he became connected with the Kindergarten College as professor of psychology. He also took a large part in the Concord Summer School of Philosophy. Since then he has been devoting himself to the development of a new system of thought which has psychology instead of philosophy as its method. He has now returned to St. Louis, and hopes to complete his life work in philosophy where he began it nearly forty years ago. Dr. Snider's most important publications, besides those already mentioned, are: *Goethe's Faust, Homer's Iliad* and *Odyssey, Dante's Inferno, Purgatory, and Paradise, Delphic days, Commentary on Froebel's mother-play-songs, The Psychology of Froebel's play-gifts, Life of Froebel, Psychology and the psychosis, The Will and its world, Social institutions, The State,* and *Ancient and modern European philosophy.*

[10] When Mr. Davidson left St. Louis, he traveled in many lands, writing, lecturing, and publishing, and gaining the reputation of being one of the foremost scholars in the world. He was connected with the Concord Summer School, and after that closed, opened a summer school of his own at Glenmore in the Adirondacks, which continued till his death in 1900. Towards the end of his life his philosophy changed from monism to a species of pluralism. His chief published works are: *The Place of art in education, Giordano Bruno, Handbook to Dante, Aristotle and ancient educational ideals, The Education of the Greek people and its influence on civilization, History of education.*

son's departure, and has since had a distinguished career as a teacher and writer of philosophy.[11]

In 1874 Dr. Harris founded the well-known Kant Club, in which his philosophical activity in St. Louis reached its culmination. It met every Saturday evening—alternately in the north and south parts of the city.[12] The southern meetings were at Dr. Harris's house on Second Carondelet Avenue, those in the north at Mr. F. E. Cook's, then at the Rev. Dr. R. A. Holland's, and finally at Mr. William Schuyler's, and Mr. James A. Garland's. In this gathering Dr. Harris's position was like that of Governor Brockmeyer in the previous decade. He was the expositor, the interpreter, the inspirer. The club began with the study of Kant, and in 1876 took up the *Smaller logic* of Hegel, then the *Phenomenology* (in Mr. Brockmeyer's translation), and finally the second volume of the *Larger logic*. Dr. Harris writes: "It was in 1879 that I came to my final and present standpoint in regard to the true outcome of the Hegelian system, but it was six years later that I began to see that Hegel himself has not deduced the logical consequences of his system in the matter of the relation of nature to the absolute idea. . . His doctrine of the Trinity makes the Second Person, or Logos, to be nature, whereas it should make the Logos to be eternally a Person like the first, and nature should be the *Processio* of the Holy Spirit. But he rightly interprets the doctrine of the invisible church as a body whose spirit is the Holy Spirit. This defect in interpreting the absolute idea

[11] He went from this city to Boston, where he became professor of logic and the philosophy of science in the Massachusetts Institute of Technology, and then lectured on philosophy in Harvard. Later he was lecturer at the University of Michigan and at the Concord School of Philosophy. In 1884 he was elected as the first Mills professor of philosophy in the University of California; this position he still holds. During his twenty years' work in California he has not only organized a very successful department, but has sent out from it a number of men who have become teachers of philosophy in other universities—among them, Washington University, Cornell, Iowa, and Texas. His *Limits of evolution* (1901) sets forth a system of pluralistic or "multi-personal" idealism, which, like the doctrine of Davidson, is in vigorous opposition to the idealistic monism characteristic of the greater part of the St. Louis school.

[12] The members of the club were D. J. Snider, Henry W. Jameson, Geo. B. McClellan, F. E. Cook, E. H. Long, Wm. M. Bryant, Rev. Dr. R. A. Holland, Geo. Lane, Jas. A. Garland, T. R. Vickroy, Hugo Haanel, Lyman W. Allen, Scott H. Blewett, Wm. Schuyler, Miss Grace C. Bibb, and a few others.

gives rise to a species of pantheism which says that the absolute is real only in the process of nature, and his personality actual only in historical persons. This is not Hegel's precise doctrine, but it may be inferred from that part of it which makes nature to be the Second Person of the Trinity. This criticism of the system of Hegel, so far as I am aware, is a new one, and I am confident of its truth. I will only add here that the interpretation of the doctrine of reflection, which I have discussed at length in treating of the second book of this *Logic,* is the result of many years' study, beginning with a series of expositions undertaken before the Kant Club of St. Louis in 1877-79, and continuing at intervals until 1887. In 1878-81 I translated, with the assistance of Mr. James A. Garland, the entire second volume of the *Logic* and published it with a commentary on some portions of it." The expense of this publication was shared between Dr. Harris and the members of the club, who had discussed each portion of the translation as it had been made, and felt it a great privilege to assist in giving this important work to the world.

In 1880 Dr. Harris, after representing the United States in the International Conference of Education at Brussels, took up his residence in Concord, Mass., and occupied himself for some part of the year mainly with the Concord Summer School of Philosophy, which may be considered as the national expansion of the local movement. The Kant Club continued for some years, being kept alive by Dr. Harris's visits to St. Louis, which were quite frequent at first, and getting along as well as it could in his absence. But his visits ceased when he became Commissioner of Education in 1889; and as no new adherents to the Society were gained and some of the ablest members had left the city, it ceased to exist. And so ended the movement, so far as any special organization or definite group in St. Louis is concerned.

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IV

DEPARTMENTAL TEACHING IN THE ELEMENTARY SCHOOLS

People interested in public education have scarcely realized that within the last few months a revolution in systems of teaching has taken place in the City of New York.

The departmental plan of instruction has been introduced into more than 130 elementary schools. About 35,000 children and 900 teachers have taken part in this new method, which so strikingly differs from the system where one teacher instructs in all the subjects of a grade.

The system, under which a single teacher instructs the pupils of a certain class in all the studies of a grade, may be denominated the single-teacher plan as opposed to the departmental plan.

Most conscientious principals were doubtless atracted to the new method thru a realization that the graded system is woefully incomplete. All agree that there must be grading. Grades indicate the rounds by which the child mounts his educational ladder. But as the graded system has been conducted, it has become the fostering mother of many abuses. The graded system must be improved. The departmental plan is being tried, not because opposed to the graded system, but because it is looked upon as a means of improving and preserving the economy and force of the graded system. It is doubtless too early to say positively what the final outcome of this innovation will be, but, at present, the returns forcibly indicate the success of the departmental plan. The great majority of the principals report it as working smoothly and successfully, while teachers and pupils are, for the most part, judging from an examination of small groups, very enthusiastic in the praise of the new method.

The last annual report of Dr. William H. Maxwell, City Superintendent of Schools, contains the replies to a circular letter to principals relative to departmental teaching. These

replies show that the majority of principals are decidedly in favor of the new plan. For example, 124 out of 132 principals reported the "interest of teachers" as "highly satisfactory," or "greatly increased," while 110 out of 132 presented the same report relative to the interest of pupils.

Dr. Edward W. Stitt, District Superintendent, conducted a questionnaire among the 43 departmental teachers of the 8th and 12th districts, in the form of an Australian ballot, so that each teacher felt free to express his unbiased opinion. In answer to the question, "Are you in favor of departmental instruction?" 39 answered "Yes," 2 were undecided, and 2 answered "No."

Mr. John W. Rafferty, Principal of P. S. 19, Brooklyn, took a vote of his departmental pupils in such a way as to secure a free opinion, and found that 241 out of 294 voted in favor of departmental instruction.

These reports are cited as the most significant types of the present feeling in New York.

During the last fifteen years or more, encouraging reports have come from isolated schools in various cities of the country, which have tried departmental teaching. But no city or state seems yet to have taken up departmental teaching to the extent found in New York.

Dr. William T. Harris reports directly to the writer, "that, so far as I am informed, the departmental plan of instruction is not the rule in the grammar schools of any of the principal cities. In a number of places certain features of the system are utilized more or less informally where the circumstances seem to require it, and, in some cities, as in Boston and Chicago, principals are permitted to adopt the plan if they wish." (Washington, July 29, 1904.)

It is well to note, however, that departmental teaching has been, and is, the system most used in the private elementary schools of the country.

CONTENT

Departmental instruction, as a plan of teaching, is very well understood from its almost universal use in the high schools.

private elementary schools, and institutions of higher education.

In the seventh and eighth grades of the elementary schools, it is preferably introduced about as follows:

The teachers of these classes, usually from four to eight in number, distribute the studies of the curriculum so that each shall teach only one study, or one group of related studies.

Each teacher is still known as the "official teacher" of a certain class of children belonging, usually, to one grade, as well as the head of a certain department of instruction. The "official teacher," as such, must keep the records of attendance and see to other duties of class organization.

The length of a recitation period is usually forty minutes, which time may or may not include the time necessary for movement of classes from one departmental room to another. The program of recitations is made out very carefully so as to avoid any conflicts, and an appropriate one is then given to each pupil and teacher.

ADVANTAGES

From the standpoint of a teacher under the departmental plan of teaching, the writer has noted a number of striking educative advantages of the departments over the single-teacher plan of instruction.

Some of them have been selected for discussion.

1. *Expert Teaching*

The child is always under the control of the teacher who is best qualified to teach any given branch. From the confusion and discouragement of preparing properly in fifteen to twenty subjects, or parts of subjects, the teacher can use his time to prepare in a single study or group. He soon becomes highly proficient in the science of his branch, as well as in the best methods of teaching it.

The pupil responds at once to superior instruction and profits greatly thereby.

This method, moreover, is a necessary evolution from the natural order of things in civilized society. A man only excels

by learning to do something better than any other man. This specialization is the basic principle of all our high success in the arts and industries. Division of labor is the congealed spirit of the age.

If a householder wants to have his gas-meter repaired, does he send for a teamster?

If a parent desires that his son be instructed in mathematics, is it not best that he should go to the best teacher in that subject? Why seek one who, from the nature of the case, can be only partially prepared? This departmental plan enables the pupil to get his instruction in all his studies, and at all times, from the best equipped teacher.

2. *Improved Discipline*

One of the greatest surprises that ever occurred to me in teaching was to find the ease and naturalness with which good conduct can be secured under the departmental plan. Previous to its introduction, I thought, with my colleagues, that the movement of classes from room to room offered endless opportunities for disorder. But just the opposite result developed, and I deem it pertinent to call attention to the more obvious reasons.

a. The movement from room to room is a great and necessary physical relief.

b. The expert teacher is more interesting.

c. The educative variety of new teachers, new studies, and new rooms, tends to keep wholesome thoughts ever present.

d. The equipment of a departmental room is more effective.

Above all, we noticed that the quality of the discipline was greatly improved. The child was becoming his own master. Added opportunities for disorder must give added opportunities for self-restraint. The child becomes more and more a free moral agent. This element in discipline is of fundamental significance. Very few children are really bad or vicious. Unnatural conditions make the best children untractable.

3. *Improved Physical Development*

Although much has been said about the necessity of improving the physical development of the elementary-school child,

yet too little has been said or realized about the imperative necessity of improving the physical conditions of school organization which act forcibly upon the health and growth of children.

As a teacher, I firmly believe that children who remain continuously for three hours in one room, in a single seat, do so at a great physical loss. Ordinary class movements are insufficient. The physical relaxation and exercise attending the movement of classes at frequent intervals cannot but prove of great benefit to the general health and growth of the child.

4. Complete Equipment

One of the greatest difficulties encountered by the regular grade teacher is to secure easily, and without undue friction, the essential apparatus for the most effective teaching. For example, the material for demonstrating an arithmetic lesson is no sooner brought into use than the session must end, to be followed by a science period. Experiments of any value in science require considerable time and room. If this lesson is taught properly, there will hardly be time left to select and mount the proper map for a geography recitation, which follows before the noon recess. As is well known, the difficulties suggested above have proven so great as to forego almost entirely in the elementary schools the proper acquirement or use of needful equipment. Not only is there no time for the constant change of apparatus, but there is no available space in an ordinary classroom for all the apparatus needful in all branches. Now, add to these limitations that of economy, which practically prohibits the supply of equipment for all subjects in all rooms, and one can glean some notion of the ordinary meagerness under the single-teacher system. But, under the departmental plan, how different! One of the first tendencies noted is that each teacher equips his department. The teacher of history is on the lookout for maps and charts, the teacher of arithmetic is collecting weights, measures, etc., while it certainly is not an exaggeration to state that there is not an efficient science teacher in New York who has not, from his own resources, purchased from $10 to $50 worth of apparatus.

Then, too, a department involves more than apparatus. In science, particularly, seats good only for listening and writing are inadequate. Seats that pupils can work in are demanded. Or, rather, no seats at all, but tables and things, where children can systematically, and under direction, find out the simple elementary facts of nature.

Man is not naturally a sedentary being, altho he is fast becoming such. The child can learn while standing, and even assimilate valuable facts when moving about. What I would suggest is that it is possible to conceive of a school where there are no seats and desks limited just for writing and sitting, but where each corner contains a departmental laboratory, in which children can go naturally, and move, and grow, and "learn by doing" the riches of each department as all the rest of the world acquires facts and skill.

5. *Proper Distribution of Time*

There is a constant tendency in the single-teacher method to give much more time and energy to one subject than to another. In fact some studies have been notoriously slighted. No matter what the program calls for, the study the teacher likes best, the one in which he is best prepared, the one to which his pupils give best attention, or the one the principal magnifies, is the study that receives the maximum amount of work. But, it is fair to assume, that, if a subject is worth putting in the curriculum, it should receive its proportionate time.

The departmental plan insures this proper distribution.

6. *Continuity of Work*

When an entirely new class begins work with a strange teacher, there is bound to be a more or less extended period of groping about for a true beginning. Reviews and repetitions are manifold. The new teacher knows nominally where the former teacher left off, but results do not tally. Now, under the departmental plan, a teacher teaches the same pupils for years. He can, therefore, lay out the entire work as a complete whole.

7. *Responsibility Directly Placed*

Although the single teacher of a grade has been nominally held responsible for the work of that grade, yet he has successfully evaded, and properly too, a large part of that responsibility. If, for example, the principal criticised the work of the class in composition, the teacher would exhibit his class compositions, showing most conclusively, (*a*) how very defective the class was in that work at the beginning of the term, and (*b*) how remarkably the class has improved during the same term.

Each former teacher of this class would repeat, more or less, the same set of proofs.

Without further discussing details, all supervisors know that this shirking of responsibility is inherent in the single-teacher plan.

Under the departmental plan, responsibility is definitely fixed. The teacher of composition has no one to place the responsibility upon other than himself.

But a more significant benefit arises from the fact that under the departmental plan greater responsibility is placed upon the pupil.

This is so well recognized, both as an advantage to the child, and as a result of the system, that further comment seems pleonastic.

8. *Economy*

(*a*) In supervision. In all large cities, aside from the regular supervisor, *i. e.*, the superintendents and principals, there has arisen a body of special supervisors of certain branches. These special teachers are not assigned to any class of pupils as their "official classes." Their employment has, therefore, been an extra burden upon the taxpayers, and, in many cities, so much friction has arisen that effectiveness has been materially lessened. By the departmental plan, each departmental teacher of any branch soon becomes a specialist, and as each one is assigned to an "official class," the extra expense of "Special teachers" as now employed may be wholly eliminated.

(*b*) In time and effort. There are many ways in which

time and effort are saved by the departmental plan, but none more striking than the ease by which pupils go from grade to grade in each study, without halting for the needless reviews and gropings of a strange teacher at the beginning of each grade.

(*c*) In equipment. It has been explained above how that the equipment for a department will serve an entire school, instead of necessitating its duplication in each grade and class under the single-teacher plan.

9. *Individuality Enhanced*

Thru the placing of greater responsibility upon each child, and the increasing of his opportunities for self-restraint and self-direction, under the departmental plan, one of the most fundamentally educative processes is emphasized. The pupil, while acting with others, learns to act more under direction of his own free volition. Real individual education is made possible. This is directly opposed to the "mothering" plan which has been fostered by the single-teacher system, and defended by many educators. This "mothering" has led to a most pernicious system of over-helpfulness in the elementary school. The child has been deprived of proper opportunities for initiative, invention, and self-mastery.

All kinds of pretty things have been said about the motherly teacher. This sentimental tendency has fostered the so-called soft education. The school is no place for "mothering"; it should be a place for work. If a little toddler needs a mother, send him home. There is not, or should not, be any substitute for a real mother. Not but that teachers should be kind, gentle, and wisely helpful, but a school is not great because homelike, but because it is truly school-like.

Individual education is again intensified by the fact that the child, thru coming under the influence of several teachers, is more able to see, compare, and choose the strong personalities of each. Under one teacher, he is very liable to acquire an objectionable peculiarity, which may be possessed by his teacher.

10. Curriculum may be Enriched

From the above discussions, it will be seen how that a subject, otherwise undeveloped in the grades, may receive proper attention where an expert teaches it and the time is properly apportioned.

11. Greater Interest

Possibility of greater accomplishment alone is sure to awaken a greater and more valuable interest on the part of the teacher.

The departmental plan particularly commends itself, because it offers a better means of intensifying and continuing the natural interest of the child than the single-teacher plan. The variety of teachers, equipments, methods, and general conditions, the physical relief in changing rooms, the continuity of superior teaching, the greater educative freedom, all tend to stimulate the child to his best endeavor.

Nothing is more deadening of itself to a child than to listen to the same voice, see the same surroundings, witness the same methods, and all within the narrow compass of a single room, and under the eye of a single teacher. Children become weary from the eternal sameness.

12. Promotion Made Easier

Individual promotion, or promotion at other than the usual times, has been one of the rarest occurrences in the graded school.

The brighter the pupil, the more the grade teacher desires to keep him. In recommending his promotion the teacher has everything to lose and nothing to gain. But, under the departmental plan, no such influence need work against a child, for, as soon as the required proficiency is reached, every one of his teachers is interested in his advancement.

13. Better Grading Made Possible

If promotion is made easier, then grading can be made more accurate. But there is an economical reason that has stood in

the way of close grading for many years. It often happens that there are many more pupils prepared for one grade than for another. It might so happen that only ten pupils are prepared for a certain grade. The tendency has been in the past to fill that grade up by some means, the educational quality of which was questionable. Under the departmental plan, it would make little difference whether an "official class" consisted of ten pupils or not, because each teacher instructs all the pupils of the school in his department.

14. Methods Become Better

This is virtually a corollary of the first heading. No teacher can be an expert teacher in any branch and not possess a working knowledge of the best methods for teaching that branch.

15. Professional Advancement Intensified

The profession of teaching must grow by each movement which emphasizes the necessity of special preparation on the part of the teacher. Greater differentiation of function has been characteristic of advancement in all ages, and division of labor is a principle which applies to all professions and occupations except the Jack-of-all-trades.

CRITICISM

Many objections have been made to the departmental plan by reason of a failure to really understand it, or properly apply it. But the first two objections herein discussed are real, and must be understood and completely overcome in order to make the new method successful. The writer regards the remaining criticisms as having little or no weight.

1. Too much work is liable to be demanded of pupils.

Certainly the tendency is marked, upon the introduction of the departmental plan, for each teacher to overmagnify the value of his subject. Each teacher is brought into competition with every other teacher in order to secure the interest and effort of each child. At the outset, it should be clearly understood that the tendency to overwork is great under the

single-teacher plan. The only point of this criticism is that the tendency to overwork pupils is greater and more difficult to control under departments.

But an efficient principal will take such steps as will entirely eliminate the possibility of overwork, and then the objection disappears as such.

These means are suggested for consideration.

a. Regular conferences of principal and teachers should be held, at which a system may be perfected for proper distribution and regulation of all school and home work.

b. All home work, as a school requirement, may be abandoned. This suggestion would entirely break the force of the above criticism. Many educators have long realized that a period of five hours a day, for ten months in the year, involved about all the work that should be demanded of the young children of the elementary schools.

c. A change of the character of home work to that of a voluntary nature.

2. Correlation made more difficult.

This theme has offered so much opportunity for the vigorous attacks of the opponents of departmental teaching, that the writer feels impelled to differentiate correlation into, at least, its six principal phases for the purpose of clearly examining the difficulties involved.

a. Proper sequence of studies and parts of studies. This kind of correlation is positively facilitated by departmental instruction, as shown above under "Continuity of work."

b. Coördination. The equalizing of studies and groups and the giving to each its proper share of time are also greatly helped by the departmental plan, as shown above.

c. Correlating subjects with the faculties of the mind, and

d. Correlating subjects with the entire human environment of the child, are correlations which are evidently secured as well or better by the departmental plan as by the single-teacher plan.

e. Unity of studies. Colonel Francis W. Parker based his plea against departmental teaching chiefly upon his belief that it would hinder the proper unity of studies. His theory of

unity demands, primarily, a teaching of content studies only, while the studies of form or means of expression are taught incidentally.

First, Colonel Parker and his followers seem to have confounded the "special-teacher system," which is practiced in most large cities, with departmental education. These are in no way to be confounded, hence many of their illustrations are not applicable.

Second, the unity of content and form, along the lines suggested by Colonel Parker and others, is a valuable thought in education, but the educational public has not accepted to any degree the extreme views of Colonel Parker.

Therefore, he would make departmental teaching antagonize a theory rather than a condition.

Third, departmental instruction in no sense hinders the unity of content and form to the degree Colonel Parker maintains. The departments may be all content subjects, and each department, as history, may be held responsible for the spelling, penmanship, etc., involved in its teaching. In this way unity may be actually enhanced.

f. Cross-correlation or interrelations between studies. This phase of correlation is the one most commonly accepted by teachers. For instance, the science work should not involve division of fractions before this topic has been taught in arithmetic. This is a matter that will not take care of itself, and will prove very harmful to the smooth working of a departmental plan, if not adjusted. It is, however, easy to regulate.

First, a well-developed course of study will take care of all direct correlations.

Second, all other correlations of any value may be adjusted at the conference above recommended.

Third, many magnify, beyond all reason, the importance of this kind of correlation. There are, of course, natural and direct correlations as named above, but many of the "wild-cat schemes" that have been put forward in recent years are not worth consideration. The child will naturally unify all the knowledge that he apperceives. Let him alone. He is a positive unifying organism. Many plans of correlation remind

one of chewing the food for a child. Give him the food without depriving him of the privilege of its mastication. He is actually educated by unifying all these so-called "scrappy" and isolated facts of human knowledge.

3. Discipline is made more difficult.

This is contrary to fact and experience as shown above.

4. Teachers become narrow.

Those who have made much of this point seem to have forgotten that the single teacher for a grade is a positive form of specialization. The grade teacher is confined (or narrowed) to a short cross-section of the course, while the department teacher is confined to a longitudinal section. So, even from this view, the departmental teacher does not suffer. But there is another view of specialization of vocation. We all agree that division of labor promotes efficiency. Again, division of labor has everywhere been characteristic of progress in civilization. But, if specialization produces narrowness, then civilization and narrowness must be concomitant—a thesis which is so paradoxical as to admit of no defense. Some of the narrowest people the writer has ever met are those who could do fairly well a thousand things.

The probability is that men are not made narrow by the limits of their occupations, but by the smallness of their outlook upon life.

5. School organization made more difficult.

This difficulty is not inherent in departmental teaching. It is necessarily greater upon introduction. Suppose the high schools should introduce the single-teacher plan for each grade. To those accustomed to the departmental plan it would offer many difficulties. The task of making a program, changing classes, etc., will soon become ephemeral, when compared to the great advantages to be gained.

6. Personal influence of teacher lessened.

That the personal influence exerted by teachers for good upon children is a very potent agency in education, is a fundamental thesis of pedagogy. But the departmental plan most surely strengthens rather than weakens this valuable personal influence.

First, the influence of the departmental teacher is continuous, extending over the entire course of the child, while the single teacher has his child for a brief period only, at the end of which his influence is entirely ruptured.

Second, the varying personal influences exerted by several teachers are more like the influences of life, and afford richer varieties of character manifestations.

Third, under the single-teacher plan, many children really fail to be reached by a proper personal attraction. The teacher may positively repel some from the good. While passing thru the departments, however, each pupil is thus more liable to meet the peculiar quality in a teacher fitted to awaken all that is best in him.

Fourth, so that those rare and more intimate personal relations which many times hold so strongly for good, are more common under a departmental system than any other.

7. Difficult to place responsibility.

Some principals have complained of a difficulty in placing responsibility, evidently from a failure to see that the "official teacher" of a class could not be held accountable for work done by another departmental teacher. The fact is, responsibility is emphasized as explained above.

8. Promotions made difficult.

This is contrary to fact and experience as explained above.

9. No time for study—all recitation.

This is a criticism which is here considered only because it is a type of the absurd errors that have been made in introducing departmental teaching. This is a gross error in method, and its source should not be traced to departmental teaching, but to a want of common sense.

Why should not a part of any period, or of all periods, be taken for study, if such a course secures the best results?

10. Penmanship and spelling poor.

Penmanship and spelling will be poor unless the responsibility for these forms of expression is positively placed. The best way to gain efficiency in the upper grades is to make each departmental teacher responsible for the penmanship and the spelling of his department.

A second way is to make each "official teacher" responsible for his own class in these subjects. A third plan is to hold the teacher of English responsible. He must, in turn, hold each departmental teacher responsible, and so this involves the first plan.

11. An inefficient teacher causes trouble.

An inefficient teacher causes trouble under any system, but less under the departmental plan than any other. Now, the condition can be stated in the following question: Which is the better plan, to place a pupil for one-half year entirely under the control of an inefficient teacher or to place him under such a teacher for one period each day? However, when distributed over a period of years, it will be found that each pupil's lost time will be the same under either plan, but most teachers will agree that it is far better to have these weak periods distributed rather than concentrated upon an entire class for a whole half year. In this way the weakening influence seems to be diluted by the filtration. The fact is there can be few inefficient teachers in the departments, and as soon as such appear, they should be removed.

12. An absent teacher causes trouble.

This is true, but for the same reasons as adduced above the friction is less under the departmental plan than under the single-teacher plan.

ERRORS IN INTRODUCTION

Many have tried a certain plan of teaching, and termed it departmental. Failure has resulted, and blame has thus been placed upon a plan which contained few, if any, true characteristics of the departmental plan. These are some of the mistakes which have invited defeat:

1. Children have remained in the same classroom during the entire day.

It is difficult to understand how this error could be made, in view of the added interest, the physical relief, the better equipment, and other gains made possible by the passing of pupils from one departmental room to another.

2. Music and drawing have been assigned to the "official class" teacher.

Among the chief advantages of departmental instruction are the gains of expert teaching and enrichment of the course. Music and drawing have suffered long for want of expert instruction, and should be the last studies to be "lumped off" on the "official class teacher," unless, of course, that teacher is a specialist.

3. "Official teachers" have been held responsible for the discipline of their classes at all times.

This error is very palpable, and one could hardly imagine a college or high school pursuing such a scheme.

4. Teachers have been assigned studies in combinations unnecessarily disassociated.

There is evidently great loss in preparing to be an expert in unrelated studies.

5. No head of department has been named where two or more teachers are teaching the same subject.

In large schools, two or three teachers are often teaching English or arithmetic. Much is gained by naming one as a responsible head.

6. The study period has been ineffectually managed.

Some sort of effort by way of preparation should be made by each pupil, unassisted and unhindered, before each formal recitation.

The study period is very important and should, therefore, be placed at the beginning of each session, and, if this is insufficient, a part of each recitation period should be taken.

7. Promotion marks have not been proportionately coördinated.

The amount of time given a subject by the program should be paramount in determining the value of each "A," "B," or "C" of a given subject. The "B" of music (60 minutes) should not count the same towards promotion as the "B" of English (360 minutes).

8. There has been too much giving of instruction—not enough individual work on the part of the pupils.

There is no valid reason why this pernicious tendency should

be carried over from the single-teacher plan to the departmental.

GENERAL CONSIDERATIONS AND SUGGESTIONS

1. When considerable difficulty is found in distributing the entire work properly in departments, certain English topics as spelling, penmanship, and reading are best left to each "official class" teacher. The chief reasons for this recommendation have been already stated.

2. Studies should be unified into related groups, and these groups should be coördinated. There is great advantage in having each department equal in importance to every other. It facilitates the making of a program, as well as the giving to each teacher of his proper share of work. In music and other studies, which demand little time, 20-minute periods may be organized with good results.

3. Until departmental teaching is popularly accepted, it should be introduced in each school at the option of the principal. This will mitigate the effect of a reaction, which is bound to set in, as well as enhance the genuineness of the new plan of teaching.

4. From the nature of the undertaking, it is too early to judge conclusively of the value of departmental teaching by any results thus far obtained in New York. Tendencies may be measured, but positive values cannot appear until more time has elapsed.

Experts in a department require years for development, equipment is not collected in a day, classes have not completed the course under each department, and, in general, the new advantages have not had time for full manifestation in the growing child.

5. Departmental education, in its future development, promises, above all else, a means, or a stepping stone to real individual education. How to educate children *en masse* and still preserve the strength of each growing individual is a problem of increasing importance.

The graded school of our great cities is acknowledged to be a form of "mass education" in its purest form. All agree

that children are promoted when unfit, and held back when ready for advancement. Whole classes, possessing the most striking individual variation in attainment, move forward in order that a higher grade and classroom may be filled. The only common element among these children is that of time. From the necessities of the graded system, under the single-teacher plan, the time unit must continue to be the paramount factor in promotion requirements. Departmental teaching gives an opportunity to recognize the units of work. There lie before me the catalogs of a prominent university and a high school, in which the students' names are arranged alphabetically, and after each name there is placed the earned credit of work. When the requisite number of " work-units " have been credited, the student has standing in the next higher grade. The grandest promise of all, then, found in departmental education is in the fact that it makes possible the division into " work-units " of the course in each department, and the crediting of each pupil only upon his mastery of a " work-unit." When individual education is enhanced, then surely the ascendency of the departmental plan will be certain.

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V

THE POLITICAL ECONOMY OF SCHOOL FINANCES[1]

SOME OF THE CONDITIONS WHICH CAUSE VARIATION IN THE RATE OF SCHOOL EXPENDITURES IN DIFFERENT LOCALITIES

Political economy has borne the name of "the dismal science." It has deserved this name when it stood for Malthusianism—the doctrine that the world will in time become so thickly populated that there will not be food enough to support the people. "Population increases in a geometric ratio while food increases only in an arithmetical ratio." This is a dismal outlook surely. The doctrine which this suggests is: "Let there be no charities and no studies with a view to public hygiene. For it is the support of the poor and the prevention of pestilence and famine and epidemics, that will hasten the dreadful day when the strong will struggle with the weak for a morsel of food—the strong getting the morsel and the weak growing weaker from hunger." Such a political economy is not only dismal, but it is subversive of all moral ideals of the race of men. No thorofare to civilization on that road—only retrogression to savagery. For it says that "Vice and crime are beneficent checks to the increase of population!"

People of this generation need not be told that the one hundred years following the publication in 1798 of the Malthusian doctrine of over-population was a progressive demonstration of its falsity. For it was found that food increased in a geometric ratio while population fell to an arithmetical ratio on the whole in the most highly civilized populations—as in France, and generally in families of wealth and nobility.

Then there was another dismal doctrine—a theory of rent, advanced by Ricardo about the year 1820. The richest soils

[1] A paper read before the Department of Superintendence of the National Educational Association, Milwaukee, Wis., March 1, 1905.

are first taken possession of by man—the less fertile soils later when the rich lands have all been taken up. Then rent begins: —the rich soils demand enough rent to make up the difference in value of crops between them and the poorer lands which may be had free by the people who will take them. By and by all the rich soils will be occupied—and all the poor soils, too, for that matter—and human labor will be rewarded by a continually decreasing product of food and creature comforts.

This Ricardian view assisted Malthusianism in discrediting the ideas of a Christian civilization that sent out its devoted missionaries, from Greenland's icy mountains to India's coral strand, to deliver the lower and lowest races from error and superstition, and all manner of savagery. At home this Christian civilization preached other-worldliness, and if it practiced worldliness it did it in the name of other-worldliness. And what has been the verdict of the century following Ricardo? An age of rapid transportation has followed an age of exploration and discovery. We have learned that the soils of northern Europe, of which Ricardo wrote as the rich soils first taken possession of, are as nothing in the matter of fertility to the soils of the tropical regions as yet scarcely occupied by man.

The Amazon valley with its two million square miles, alone when cultivated to its full capacity, will supply ten times the food and clothing needed by the present population of the entire globe.

The age of Machinery has come upon us—a new Avatara succeeding upon the Avatara of hard labor and physical drudgery, and men are called up higher into directive power out of mere muscular labor. The intelligent mind armed with science —the tools of the mind—is commanding the forces of nature—the elemental powers of heat and electricity—re-enforcing the bodily force of man by multipliers of ten, one hundred, one thousand; annihilating the intervals of distance that separate man from man in space, to such an extent by commerce and its means of transportation that food, clothing, and shelter come everywhere they are wanted, and a myriad of natural productions that were formerly not property but only a useless im-

cumbrance where nature had placed them, now by transportation become real wealth to the distant people who needed them.

At the beginning of the nineteenth century political economy was a dismal science. At the end of the nineteenth century everybody is buoyant with hope so far as food, clothing, and shelter are concerned—a plenty is in sight even for the poorest races of mankind, and possibilities of migration are right at hand for any countries that are really over-populated.

Gladstone estimated in 1870 that labor-saving machinery was doubling the world's production of wealth once every seven years. Eight million of laborers in Great Britain, armed by machinery, were at that time producing as much as one or two hundred millions of laborers of the entire world at the beginning of the nineteenth century.

This was the cheerful response of political economy at the end of the nineteenth century to the dismal Sphinx-riddle propounded by Malthus and Ricardo at the beginning of that century.

Altho there are dismal enough doctrines preached even at the end of that century, they are not doctrines of starvation, but only of relative poverty with plenty to eat and wear.

Luxury and an abundance of creature comforts it says shall be forbidden to the poor household. Henry George thought that the persistence of poverty in the midst of advancing wealth is due to private ownership of land. But careful investigation has shown that land in the United States is a small burden, only one-eighteenth of the annual earnings of the people in 1880—two and one-fifth cents per day as against actual average production of more than forty cents a day for each inhabitant. A grain of economy or thrift on the part of individuals will compensate for all the rental of land in the United States.

Even in Great Britain the land value had not doubled in eighty years, altho the values of other property—houses and machinery and means of transportation—and creature comforts had increased to seven times their former value.

Land for the purposes of mere agriculture is everywhere cheap; it is only for building purposes that land commands a

high price. (The land on which New York City stands is worth one-seventh of all the land in the United States.) The same amount of acreage on a rich borderland can be had for thirty thousand dollars, but the land of New York City is assessed at three billion dollars, and is worth much more in the market—it is worth one hundred thousand times as much per acre for international business purposes as for mere agricultural land, without a city market near for its produce.

Karl Marx, the father of recent Socialism, in his famous work on *Capital,* about 1870, wrote the German words which I translate as follows:

"Along with the constantly diminishing number of great capitalists who monopolize the instruments of production, there is a constantly increasing mass of misery, oppression, bondage, deformity, and extortion."

But this law of Karl Marx, which has been adopted by Henry George in the terse form of the epigram, "The rich are growing richer and the poor are growing poorer," has not been found to be valid even in England where Marx made his generalization, for the income-tax returns showed in 1885 that the class of the very poor had decreased by the transfer of a large number to the lower middle class, which lower middle class was nearly three and one-half times as large in each million of the population as it had been thirty years before. The same transference of the lower middle class into the higher middle class had been going on, and from the higher middle class to the wealthy class, and so on to the very wealthy class, so that there were three times as many in each of the higher classes per million as thirty years before.[2] And the average earnings of

[2] See Leoni Levi's *Wages and earnings of the working classes*, London, John Murray, 1885, p. 48 and 58. Also see Robert Giffen's *The progress of the working classes*, Economic Tracts, No. 16, New York.

Leoni Levi reports incomes from $750 to $1500 in 1880 as three and a half times as many as in 1850; incomes of $1500 to $2500, three times as many as in 1850; incomes $2500 to $5000, two and one-half times as many as in 1850; incomes $5000 to $10,000, two and one-half times as many in 1880 as in 1850; incomes $10,000 to $15,000, two and three-quarter times as many as in 1850. The laboring class whose annual incomes are less than $750 averaged $265 in 1851 and in 1881 $415. One hundred and eighty thousand of these have ascended to the class of incomes between $750 and $1500, during the thirty years after 1850.

the lowest class, that of people who get less than $750 per family and do not pay án income tax, had nearly doubled in thirty years. (It had been $265 in 1851 and had risen to $415 in 1881.) It had increased, whether measured in money or in the comforts of life that can be bought for the increased wages.

The question of present annual earnings in the form of wages, salaries, or profits from a business, is only a single one of the many items that have to be considered in the year's income. There goes down from the savings of a people a certain amount of wealth from one year to another and from one generation to another. The people that come after do not have to earn this money over again, but they have the annual use and benefit of it as an inheritance. Thus the previous generations, in so far as they were thrifty and accumulated property in the form of permanent improvements, assist the later generations to live. Public buildings, business houses, and dwelling houses belong to this kind of property; also highways, bridges, railroads, canals, waterworks, sewers, ships and steamboats, etc. The rental of the buildings and the use of the railways as a means of transportation as well as the improvements on the farms appear in the annual output of productions, but the actual rental value of the dwelling houses is a separate affair and must be added to the bulk of productions as tho it were actual earning for the year. The growth of the United States in production has been carefully estimated and re-estimated by the directors of the United States census. The bulk of wealth transmitted from year to year did not amount to any considerable sum until after the introduction of steam navigation on rivers, lakes, and the ocean, and after the first building of railroads. This had begun and was an appreciable item by 1850 when the valuation of the United States is reckoned at 7 billions of dollars. In the decade 1850 to 1860 this had increased to 16 billions of dollars; and in twenty years, that is, by 1870, to 30 billions of dollars; in 1880, to 44 billions of dollars; in 1890, to 65 billions of dollars; in 1900 it is estimated by some at $94,000,000,000. The average amount of property in 1850 for each inhabitant was therefore $308; in 1860, $514; in 1870, $780; in 1880, $870; in 1890, $1036; in1900, $1235.

PER CAPITA WEALTH IN THE UNITED STATES. BASED ON THE TRUE VALUATION OF REAL AND PERSONAL PROPERTY FROM CENSUS REPORTS 1850 TO 1890

	1890	1880	1870	1860	1850
The United States	$1,036	$870	$780	$514	$308
North Atlantic Division	1,232	1,209	1,243	528	363
South Atlantic Division	579	495	384	537	333
South Central Division	569	435	334	598	299
North Central Division	1,129	932	735	436	208
Western Division	2,250	1,291	843	434	187

This property which is transferred from one generation to another, consisting of the machinery of production, of improved farms, city building lots and buildings, includes nearly all of the taxable property in a community, and it will be seen at a glance what an increase in the power that capital gives exists in the United States because of the growth of the taxable wealth of 1850 to that of 1900. The taxable wealth of 1900 is $1235 per individual inhabitant and that of 1850 was only $308. The individual of 1900 is represented by four times as much realized wealth and therefore can bear a burden of taxation equal to four times that of 1850 with greater ease, because the larger the income from vested property the greater the tax possible without stinting the individual in his necessities.

In 1880, after studying the census and such other sources of information as then were accessible as to the earnings and taxable property of the United States and Great Britain, I constructed a table stating, as nearly as I could ascertain, the actual annual income of the nation from various sources for the year 1850 and the year 1880. When the census report of 1890 had become available in 1895 and 1896, I continued the comparative table so as to include 1890. It is not yet quite time to construct such a table for the year 1900, but two of the three most important items have been accessible for some time and I have partially reconstructed my table so as to include 1900 in four of its items, agricultural and manufacturing items being accessible in the census. Those items needed are the statistics of the productions of mines, freight by water, fisheries, and a number of small items.

There is no study more illuminating in political economy than the study of the actual earnings of a people in the several classes of productions. The actual total earnings of the United States in 1890, I made to be 51 1-2 cents per day per inhabitant; this was an increase over the earnings of 1880 which summed up 44 1-2 cents per day for each person. The earnings for 1850, calculated on the same basis but with less reliable data to go upon, were 30 cents a day for each person; for 1900, the estimate finds 58.12 cents per day for each person.

EARNINGS PER INHABITANT OF UNITED STATES PER DIEM AT DIFFERENT EPOCHS

	1850	1880	1890	1900
Agricultural, including live stock	12.	14.5	10.8	13 5
Manufactures as reported	5.8	10.8	18 4	20.3
From transportation in enhanced value of products	1.2	3.7	4.7	5.28
Agricultural products consumed in the household and not reported	3.2	4.1	4.	4.
Household manufactures not reported	4.8	4.4	4.	4.
Building of railroads	.75	1.8	1.3	1.3
Mining, fisheries, and miscellaneous	.25	2.2	4.24	4.24
House and furniture rent (cost of homes)	2.	3.	4.	5.5
Total cents per day for each person	30.	44.5	51.44	58.12

FOR THE UNITED STATES	Value for 1900	Per inhabitant per day
Value farm products	$3,742,129,357	.135
Value manufactured products	5,656,521,284	.203
Value mineral products (estimated)	704,469,710	.0254
Value products fisheries (estimated)	55,476,039	.002
Freight earnings (land)	1,052,602,235	.038
Drayage, etc. (estimated at 18 per cent. freight earnings)	189,468,402	.0068
Freight earnings (water) estimated	166,428,129	.006
Expressage (estimated)	55,476,040	.002
House rent (estimated)	1,109,520,795	.040
Furniture rent (estimated)	416,070,298	.015
Railroad building (estimated)	360,594,258	.013
Household manufactures not reported (estimated)	1,109,920,795	.040
Agricultures not reported (estimated)	1,109,920,795	.040
Miscellaneous (partly estimated)	415.680,325	.015
		.5812

DAILY EARNINGS PER INHABITANT IN AGRICULTURE AND MANUFACTURES (from Census)

	MANUFACTURES Amount earned per day by each inhabitant		AGRICULTURE Amount earned per day by each inhabitant	
	1890	1900	1890	1900
United States	$.184	$.203	$.085	$.115
North Atlantic Division	.357	.384	.049	.064
South Atlantic Division	.075	.097	.079	.106
South Central Division	.048	.056	.103	.149
North Central Division	.163	.187	.103	.186
Western Division	.152	.175	.122	.193
North Atlantic Division				
Maine	.183	.230	.067	.108
New Hampshire	.277	.348	.073	.106
Vermont	.148	.221	.110	.175
Massachusetts	.508	.471	.028	.033
Rhode Island	.525	.561	.028	.034
Connecticut	.450	.504	.051	.067
New York	.384	.389	.055	.069
New Jersey	.313	.379	.044	.051
Pennsylvania	.291	.345	.046	.066
South Atlantic Division				
Delaware	.267	.278	.084	.110
Maryland	.210	.226	.056	.081
District of Columbia	.263	.278	.004	.008
Virginia	.063	.086	.059	.109
West Virginia	.054	.091	.060	.105
North Carolina	.030	.061	.075	.115
South Carolina	.031	.051	.112	.128
Georgia	.049	.060	.110	.114
Florida	.071	.110	.075	.084
South Central Division				
Kentucky	.093	.091	.081	.130
Tennessee	.049	.060	.071	.119
Alabama	.041	.055	.107	.122
Mississippi	.018	.033	.138	.160
Louisiana	.060	.077	.121	.131
Texas	.042	.047	.120	.188
Arkansas	.025	.044	.106	.138
Oklahoma	.005	.018	.016	.257
Indian Territory		.012	....	.162
North Central Division				
Ohio	.224	.254	.078	.132
Indiana	.121	.178	.118	.170
Illinois	.272	.295	.101	.150
Michigan	.161	.178	.083	.124
Wisconsin	.167	.201	.085	.153
Minnesota	.155	.140	.119	.200
Iowa	.066	.078	.165	.323
Missouri	.150	.150	.083	.142
North Dakota	.029	.031	.268	.463
South Dakota	.018	.030	.147	.359
Nebraska	.066	.107	.132	.320
Kansas	.060	.079	.140	.300
Western Division				
Montana	.065	.274	.107	.265
Wyoming	.058	.072	.085	.295
Colorado	.144	.182	.071	.136
New Mexico	.015	.037	.029	.128
Arizona	.027	.286	.042	.138
Utah	.061	.082	.053	.134
Nevada	.040	.053	.124	.335
Idaho	.025	.033	.102	.248
Washington	.171	.199	.091	.157
Oregon	.171	.132	.139	.211
California	.211	.212	.177	.218

A city that has a history extending back for eight generations has accumulated vast property in the way of buildings and improvements, graded streets, sewers, bridges, waterworks, etc., and can realize a large sum of money for the support of its city government, charities, schools, et cetera, from a comparatively small tax-rate. In considering school finances one must remember that the borderland with the unfinished condition of its public and private property, has by far more needs for taxation for the purpose of public and private improvements than the old and thickly-settled States. And on the other hand it has a small assessed value to be taxed, even for the absolutely necessary expenses of the year without counting in any investments for new public works. Contrast the city of Boston with the city of St. Louis, Kansas City, or even Chicago. The population of Boston is estimated at 621,000 people for this year of 1905; its assessed valuation of all taxable property and its real valuation are the same—one and one-quarter billions of dollars ($1,237,038,851); Chicago has more than three times the population (1,968,800) and less than one-third of the assessed valuation ($411,424,280) of the taxable property. The real value of the property of Chicago, however, is something more than two billions of dollars ($2,057,121,400) for it is assessed at only one-fifth of its true value; its tax on the real value of its property is about one and one-sixth per cent. against one and one-half per cent. in Boston. The Boston tax yields about thirty dollars per inhabitant; the Chicago tax yields about eleven dollars per inhabitant. The population of St. Louis is estimated at 750,000; it is assessed at $466,201,650, but its true value is $666,000,000. Its annual tax is about one and one-third per cent. on the true value and yields $13.60 per inhabitant.

City land can reimburse itself, whatever its rate of taxes, from the rentals paid by its tenants. If the business is sufficient to afford the rental, the lessee can afford to pay it. If not rented or rentable, the property must fall in value until it reaches an assessable value which can be covered by the rental. For the rental must cover the proper interest on the real value of the property and its annual taxes. If not, the assessment

must be corrected. This is the weak point in the single-tax theory. For the agriculturist cannot recover his tax from the crops he raises, having to compete with all other localities. But the city has its reason for existence in local conditions which force a transfer of merchandise at that point, it being necessary to collect and redistribute at that point. Whatever profits are made at that point by collection and redistribution create the rental price of the land which must be used there for commerce and the accompanying manufactures, and this real value cannot be arbitrarily affected.

Inequality of the Census Divisions as regards the amount of wealth: In 1890 the total real wealth of the South Atlantic Division of States per individual was $579. This is not quite one-half of the average value in the North Atlantic Division, which was $1232. The per capita of wealth in the South Central Division or the Gulf States was $569. In the North Central Division the wealth equaled $1129 per individual, almost exactly one-half of the amount of wealth per individual in the Western Division ($2250). The average inhabitant of the South Atlantic Division would procure by taxation at the rate of one per cent. on the taxable wealth, less than one-half as much money for schools as the average inhabitant would procure in the North Atlantic Division. And in the North Central Division where the taxable wealth is nearly what it is in the North Atlantic Division the amount procured by a one per cent. tax would be one-half what each inhabitant of the Western Division of States would procure at the same rate of tax. If we compare these census divisions as to their annual earnings in agriculture and manufactures, the disparity is quite as great, for the earnings per diem of each inhabitant in the South Central Division for 1900 amounted to 5 6-10 cents for manufactures and 14 9-10 for agriculture, which makes 20 1-2 cents earnings for each inhabitant per day, while the North Atlantic Division produced 38 4-10 cents by manufactures and 6 4-10 by agriculture, a total of 44 8-10 cents per day for each inhabitant. That of the South Atlantic Division was nearly the same as the South Central Division, being 20 1-3 cents per day per inhabitant. Therefore in these two most important items

of production the inhabitant of the Gulf States or of the South Atlantic States produced as daily earnings less than one-half what the inhabitant of the North Atlantic Division produced. The North Central Division produced 18 7-10 in manufactures and 18 6-10 in agriculture, making a total of 37 3-10 cents per inhabitant per day, as against 44 8-10 cents in the North Atlantic Division. The Western Division averaged 17 5-10 in manufactures and 19 3-10 in agriculture, making 36 8-10 cents per day per individual, a half a cent per day less than the North Central Division.

The less received from taxation at a given rate for public expenses, say school expenditure—the more the individual must pay from his own earnings—that is to say, if he is to expend an equal amount with the per capita of a census division that possesses a greater amount of assessable wealth. Hence if the inhabitants of the South Atlantic and South Central Divisions, possessing less than one-half of the amount of assessable wealth per capita, are to continue their schools for the same length as the school session in the North Atlantic Division, and if they are to pay as high salaries as in that division, a very large sum would have to be made up from the annual earnings of the individuals, or else a rate of taxation nearly double that in the North Atlantic Division must be adopted. But the individual earnings in that section, as it appears, are less than one-half those in the North Atlantic Division, and any tax paid by the individual for schooling is to the average citizen of the South a far greater burden than in the northern community.

I quote here from my annual report for 1903 a series of tables showing a comparison of 1880, 1890, and 1903, as to the true valuation of real and personal property in the several States, together with the amount expended for current expenses of public schools, and also for the three epochs, 1880, 1890, and 1903, showing the number of cents actually expended on each $100 of true valuation of all property The amount on the one-hundred-dollar valuation varies from 53 cents on the $100 in New Jersey, to 22 1-2 cents in Connecticut. Contrasting this with the South Atlantic Division, as to the amount of school expenditure per $100 of true valuation, the South

Table No. 1—Showing:

(1) True valuation of real and personal property for 1880, 1890, and 1903 (1880 and 1890 taken from census reports; 1903 calculated from data given in *World Almanac*, 1905).

(2) Expenditures for public schools (excluding debt paid) for 1880, 1890, and 1903.

(3) Amount expended for public schools on each $100 of true valuation of all real and personal property for 1880, 1890, and 1903.

	True valuation of real and personal property			Expenditure for public schools (excluding debt paid)			Expended for public schools on each $100 of true valuation of all real and personal property		
	1880	1890	1903	1880	1890	1903	1880	1890	1903
The United States.....	$43,642,000,000	$64,829,040,611	$97,142,708,523	$78,094,687	$140,506,715	$251,457,625	Cents 17.9	Cents 21.7	Cents 25.9

Table No. 2—Wealth and School Expenditure, 1880, 1890, and 1903, North Atlantic Division

State or Territory	True valuation of real and personal property			Expenditure for public schools (excluding debt paid)			Expended for public schools on each $100 of true valuation of all real and personal property		
	1880	1890	1903	1880	1890	1903	1880	1890	1903
							Cents	Cents	Cents
Maine.....	$511,000,000	$489,134,128	$559,093,487	$1,067,991	$1,327,553	$1,952,083	20.9	27.1	34.9
New Hampshire	363,000,000	325,128,740	363,167,582	565,339	844,333	1,167,464	15.6	26.0	32.1
Vermont.....	302,000,000	265,567,323	275,429,141	446,217	711,072	1,093,238	14.8	26.8	39.7
Massachusetts.....	2,623,000,000	2,803,645,447	5,171,268,181	4,983,900	8,286,062	15,170,070	18.9	29.6	29.3
Rhode Island.....	400,000,000	504,162,352	676,458,765	526,112	884,966	1,856,376	13.2	17.6	27.4
Connecticut.....	779,000,000	835,120,219	1,575,341,188	1,408,375	2,157,014	3,526,615	18.1	25.8	22.4
New York.....	6,308,000,000	8,576,701,991	16,922,900,288	10,296,977	17,543,880	41,418,095	16.3	20.5	24.5
New Jersey.....	1,305,000,000	1,445,285,114	1,481,320,550	1,873,465	3,340,190	7,824,147	14.4	23.1	52.8
Pennsylvania	4,942,000,000	6,190,746,550	9,689,140,474	7,369,682	12,928,422	24,354,888	14.9	20.9	25.1
North Atlantic Division...	$17,533,000,000	$21,435,491,864	$36,714,119,656	$28,538,058	$48,023,492	$98,362,976	16.3	22.4	26.8

Table No. 3—Wealth and school expenditure, 1880, 1890, and 1903. South Atlantic Division

State or Territory	True valuation of real and personal property			Expenditure for public schools (excluding debt paid)			Expended for public schools on each $100 of true valuation of all real and personal property		
	1880	1890	1903	1880	1890	1903	1880	1890	1903
							Cents	Cents	Cents
Delaware	$136,000,000	$175,678,795	$200,000,000	$207,281	$275,000	$453,670	15.2	15.7	22.7
Maryland	837,000,000	1,085,473,048	1,313,902,873	1,544,367	1,910,663	2,549,497	18.5	17.6	19.3
District of Columbia	220,000,000	343,596,733	441,085,362	438,567	905,777	1,540,279	19.9	26.4	34.9
Virginia	707,000,000	862,318,070	883,005,583	946,109	1,604,509	2,137,365	13.4	18.6	24.2
West Virginia	350,000,000	438,954,881	563,210,516	707,553	1,198,493	2,403,555	20.2	27.3	42.7
North Carolina	461,000,000	584,148,999	1,083,432,350	376,062	714,900	1,523,041	8.2	12.2	14.1
South Carolina	322,000,000	400,911,303	486,680,664	324,629	450,936	1,046,144	10.1	11.2	21.5
Georgia	606,000,000	852,409,449	1,029,803,769	471,029	1,190,354	2,240,247	7.8	14.0	21.7
Florida	120,000,000	389,489,388	420,378,061	114,805	516,533	792,919	9.6	13.3	18.9
South Atlantic Division	$3,759,000,000	$5,132,980,666	$6,421,598,178	$5,130,492	$8,767,165	$14,686,717	13.6	17.1	22.9

Table No. 4—Wealth and school expenditure, 1880, 1890, and 1903. South Central Division

State or Territory	True valuation of real and personal property			Expenditure for public schools (excluding debt paid)			Expended for public schools on each $100 of true valuation of all real and personal property		
	1880	1890	1903	1880	1890	1903	1880	1890	1903
							Cents	Cents	Cents
Kentucky	$902,000,000	$1,172,232,313	$1,419,268,885	$1,069,030	$2,140,678	$2,662,863	11.9	18.3	18.7
Tennessee	705,000,000	887,956,143	818,053,881	744,180	1,526,241	2,159,444	10.6	17.2	26.4
Alabama	428,000,000	622,773,504	768,759,031	500,000	890,000	1,057,900	11.7	14.3	13.8
Mississippi	354,000,000	454,242,688	474,143,670	830,705	1,109,575	1,868,544	23.5	24.4	39.4
Louisiana	382,000,000	495,301,507	640,883 451	411,858	817,110	1,551,232	10.8	16.5	24.2
Texas	825,000,000	2,105,576,766	2,925,911,994	1,030,000	3,178,300	5,682,123	12.5	15.1	19.3
Arkansas	286 000 000	455,147,422	657.313,442	287,056	1,016,776	1,550,697	10.0	22.3	23.4
South Central Division	$3,882,000,000	$6,193,230,433	$7 704,334,352	$4,872,829	$10,678,680	$18,193,734	12.6	17.2	23.6

Table No. 5—Wealth and school expenditure, 1880, 1890, and 1903. North Central Division

Table No. 5—Wealth and school expenditure, 1880, 1890, and 1903. North Central Division

State or Territory	True valuation of real and personal property			Expenditure for public schools (excluding debt paid)			Expended for public schools on each $100 of true valuation of all real and personal property		
	1880	1890	1902, '3 or '4	1880	1890	1903	1880	1890	1903
							Cents	Cents	Cents
Ohio	$3,238,000,000	$3,951,382,384	$4,373,955,555	$7,166,963	$10,602,238	$15,691,039	22.1	26.8	34.9
Indiana	1,681,000,000	2,095,176,626	3,318,158,875	4,491,850	5,245,218	9,216,082	26.7	25.0	27.8
Illinois	3,210,000,000	5,066,751,719	6,769,068,618	7,014,092	11,645,126	20,266,618	21.9	23.0	29.9
Michigan	1,580,000,000	2,095,016,272	3,670,000,000	2,775,917	5,349,366	8,777,252	17.6	25.5	23.9
Wisconsin	1,139,000,000	1,833,308,523	4,380,962,406	2,177,023	3,801,212	7,009,150	19.1	20.7	15.9
Minnesota	792,000,000	1,691,851,927	2,487,150,437	1,328,429	4,187,310	6,774,336	16.8	24.7	27.2
Iowa	1,721,000,000	2,287,348,333	2,790,576,443	4,484,043	6,382,053	9,834,319	26.1	27.9	35.2
Missouri	1,562,000,000	2,397,902,945	3,356,330,067	2,675,364	5,434,262	8,363,128	17.1	22.7	24.9
North Dakota	118,000,000	337,006,506	450,786,480	245,000	626,949	2,140,565	20.8	18.6	47.5
South Dakota		425,141,299	524,868,888		1,199,630	1,847,813		28.2	35.2
Nebraska	385,000,000	1,275,685,514	1,965,194,960	1,108,617	3,376,332	4,390,751	28.8	26.5	22.3
Kansas	760,000,000	1,799,343,501	1,991,238,952	1,818 337	4,972,067	4,804,563	23.9	27.6	24.1
North Central Division	$16,186,000,000	$25,255,915,549	$36,078,291,681	$35,285,635	$62,823,563	$90,115,625	21.8	24.9	27 5

Table No. 6—Wealth and school expenditure, 1880, 1890, and 1903. Western Division

State or Territory	True valuation of real and personal property			Expenditure for public schools (excluding debt paid)			Expended for public schools on each $100 of true valuation of all real and personal property		
	1880	1890	1903	1880	1890	1903	1880	1890	1903
							Cents	Cents	Cents
Montana	$40,000,000	$453,135,209	$613,651,848	$78,730	$364,084	$1,236,253	19.7	8.0	20.1
Wyoming	54,000,000	169,773,710	245,773,363	28,505	225,000	253,551	5.3	13.3	10.3
Colorado	240,000,000	1,145,712,267	2,447,368,421	395,227	1,681,379	3,100,855	16.5	14.7	12.7
New Mexico	49,000,000	231,450,897	220,171,400	28,973	85,000	300,531	5.9	3.7	13.6
Arizona	41,000,000	188,880,976	302,185,580	61,172	181,914	397,972	14.9	9.6	13.2
Utah	114,000,000	349,411,234	375,264,320	132,194	394,685	1,496,056	11.6	11.3	39.9
Nevada	156,000,000	180,323,668	202,704,657	220,245	161,481	209,484	14.1	9.0	10.3
Idaho	29,000,000	207,896,501	562,282,391	38,411	160,020	826,598	13.2	8.1	14.7
Washington	62,000,000	760,698,726	1,020,175,789	112,615	958,111	3,580,742	18.2	12.6	34.8
Oregon	154,000,000	590,396,194	619,856,746	307,031	805,979	1,526,366	19.9	13.7	24.6
California	1,343,000,000	2,533,732,627	3,605,840,141	2,864,571	5,187,162	8,170,165	21.3	20.5	22.6
Western Division	$2,282,000,000	$6,811,422,099	$10,224,364,656	$4,267,673	$10,213,815	$21,098,573	18.7	15.0	20.6

Table No. 7	Average monthly salaries of teachers		Average length of school term in days	Average number of days' schooling given to every child 5 to 18 years of age
	Male	Female		
The United States .	$49.98	$40.51	147.2	71.8

A	Average Monthly Salaries of Teachers	
	Male	Female
North Atlantic Division . . .	$ 58.64	$39.50
Maine	37.37	27.60
New Hampshire . . .	43.58	29.11
Vermont	47.16	29.68
Massachusetts	145.27	54.61
Rhode Island	119.06	51.90
Connecticut	102.44	45.26
New York	.. ..	.. ..
New Jersey	.. ..	.. ..
Pennsylvania	44.82	34.11

B	Average length of school term in days	Average number of days schooling given to every child 5 to 18 years of age
North Atlantic Division . . .	178.5	92.3

Table No. 8—A	Average Monthly Salaries of Teachers	
	Male	Female
South Atlantic Division . . .	$30.84	$29.02
Delaware	36.60	34 08
Maryland	.. ..	.. ..
District of Columbia . . .	94.48	64.31
Virginia	34.56	27.20
West Virginia	.. ..	.. ..
North Carolina	26.72	24.28
South Carolina	25.96	23.20
Georgia	.. ..	.. ..
Florida	39.68	33.67

B	Average length of school term in days	Average number of days' schooling given to every child 5 to 18 years of age
South Atlantic Division . . .	118.0	49.0

Table No. 9—A	Average Monthly Salaries of Teachers	
	Male	Female
South Central Division	$42.97	$34.79
Kentucky	50.90	39.18
Tennessee	41.00	33.70
Alabama	31.00	27.00
Mississippi	33.54	29 46
Louisiana	36.25	31.43
Texas	56.00	42.30
Arkansas	36.17	32.75
Oklahoma	31.93	26.20
Indian Territory	.. ..	.. ..

B	Average length of school term in days	Average number of days' schooling given to every child 5 to 18 years of age
South Central Division	105.6	43.9

Table No. 10—A	Average Monthly Salaries of Teachers	
	Male	Female
North Central Division	$53.96	$41.09
Ohio	45.00	40.00
Indiana	66.80	48.00
Illinois	65.83	55.62
Michigan	54.76	38.72
Wisconsin	81.93	40.78
Minnesota	55.40	38.87
Iowa	45.99	32.60
Missouri	44.55	42.00
North Dakota	45.46	39.00
South Dakota	40.03	33.52
Nebraska	52.03	40.84
Kansas	44.24	36.55

B	Average length of school term in days	Average number of days' schooling given to every child 5 to 18 years of age
North Central Division	156.9	83.6

Table No. 11—A	Average Monthly Salaries of Teachers	
	Male	Female
Western Division	$70.82	$59.39
Montana	76.89	52.04
Wyoming	73.68	43.36
Colorado	69.63	53.04
New Mexico	64.77	64.77
Arizona	80.33	67.53
Utah	71.11	48.31
Nevada	108.69	63.64
Idaho	63.00	53.00
Washington	57.54	46.82
Oregon	51.30	40.02
California	97.21	80.44

B	Average length of school term in days	Average number of days' schooling given to every child 5 to 18 years of age
Western Division	146.3	85.3

Table No. 12—A

(1) Amount raised for each person 5 to 18 years of age (1902-03).

(2) Amount raised per adult male (1902–03).

B

Progress of school expenditure; total amount expended for schools.

	Progress of school expenditure. Total amount expended for schools					Amount raised for each person 5 to 18 yrs. of age	Amount raised per adult male
	1870-71	1879-80	1889-90	1899-1900	1902-03		
The United States	$69,107,612	$78,094,687	$140,506,715	$214,964,618	$251,457,625	$11.17	$11.32

Atlantic Division expends from 43 cents in West Virginia down to 14 cents in North Carolina, the average for the whole Division being 23 cents on the $100, while it is 27 cents in the North Atlantic Division. Taking these figures in connection with those above discussed, namely the fact that the assessment in the North Atlantic Division is more than twice as great as in the South Atlantic Division, it will be seen that the amount of money raised by the rate per cent. in the South is less than one-half of that raised in the North. In the North Central Division the amount expended on the $100 varies from 47 1-2 cents in North Dakota to 16 cents in Wisconsin, and the average is 27 1-2 cents. The Western Division varies from 40 cents on the $100 dollars in Utah to 10 3-10 cents in Wyoming and Nevada.

The next set of tables (Nos. 7 to 11) shows the average monthly salaries of teachers for the different sections of the United States, and the average number of days' schooling given. Here we find the results of the figures as to daily earnings and as to amount of taxable property. The North Atlantic Division with its double the daily earnings and double the amount of taxable property gives $58.64 per month for its male teachers and $39.50 for its female teachers as against $30.84 per month for male teachers in the South Atlantic Division, and $29.02 for the women teachers. The salaries of teachers in the South Central Division average considerably more than for the South Atlantic Division, the men getting $43 a month and the women getting $35 a month. But another item comes in here: the average length of the school term in the South Central Division is 105 days, while the average length in the North Atlantic Division is 178 days and a half. The school term in the North Atlantic Division is practically a scholastic year, hence the male teacher in the North Atlantic Division can be hired by the year and can depend upon his salary for his yearly support, while in the South the period of schooling includes about one-half of the days (105 days) in the regular scholastic year, and hence the teacher must shift to some other employment to make up his year's income. The North Central Division pays on an average five dollars less per

Table No. 13—A	Amount raised for each person 5 to 18 years of age	Amount raised per adult male
North Atlantic Division	$18.13	$14.88
Maine	12.70	9.39
New Hampshire	11.29	7.65
Vermont	13.59	10.07
Massachusetts	22.98	16.97
Rhode Island	16.13	12.77
Connecticut	15.78	11.73
New York	20.61	16.40
New Jersey	15.27	12.94
Pennsylvania	16.02	14.74

Progress of school expenditure; total amount expended for schools

B	1870-71	1879-80	1889-90	1899-1900	1902-03
North Atlantic Division	$29,796,835	$28,538,058	$48,023,492	$83,910,564	$98,362,976
Maine	950,662	1,067,991	1,327,553	1,712,795	1,952,083
New Hampshire	418,545	565,339	844,333	1,052,202	1,167,464
Vermont	499,961	446,217	711,072	1,074,222	1,093,238
Massachusetts	5,579,363	4,983,900	8,286,062	13,826,243	15,170,070
Rhode Island	461,160	526,112	884,966	1,548,675	1,856,376
Connecticut	1,496,981	1,408,375	2,157,014	3,189,249	3,526,615
New York	9,607,904	10,296,977	17,543,880	33,421,491	41,418,095
New Jersey	2,302,341	1,873,465	3,340,190	6,608,692	7,824,147
Pennsylvania	8,479,918	7,369,682	12,928,422	21,476,995	24,354,888

Table No. 14—A	Amount raised for each person 5 to 18 years of age	Amount raised per adult male
South Atlantic Division	$4.18	$5.56
Delaware	8.10	7.34
Maryland	7.58	7.82
District of Columbia	24.21	17 49
Virginia	3 52	4.61
West Virginia	7.62	9.08
North Carolina	2.11	3.18
South Carolina	2.32	3.79
Georgia	2.74	4.05
Florida	4.58	5.36

Progress of school expenditure; total amount expended for schools

B	1870-71	1879-80	1889-90	1899-1900	1902-03
South Atlantic Division	$3,781,581	$5,130,492	$8,767,165	$12,921,797	$14,686,717
Delaware	153,509	207,281	275,000	453,670	453,670
Maryland	1,214,729	1,544,767	1,910,663	2,803,032	2,549,497
District of Columbia	373,535	438,[illegible]	905,777	1,076,620	1,540,279
Virginia	587,472	946,109	1,604,509	1,989,238	2,137,365
West Virginia	577,719	707,553	1,198,493	2,009,123	2,403,555
North Carolina	177,498	376,062	714,900	950,317	1,523,041
South Carolina	275,688	324,689	450,936	894,004	1,046,144
Georgia	292,000	471,029	1,190,354	1,980,016	2,740,247
Florida	129,431	114,895	516,533	765,777	792,919

Table No. 15—A	Amount raised for each person 5 to 18 years of age	Amount raised per adult male
South Central Division	$3.65	$4.98
Kentucky	3.94	4.81
Tennessee	3.14	4.14
Alabama	1.50	2.21
Mississippi	3.35	5.07
Louisiana	3.29	4.54
Texas	5.15	7.13
Arkansas	3.54	5.00
Oklahoma	5.79	6.61
Indian Territory	3.14	4.31

Progress of school expenditure; total amount expended for schools

B	1870-71	1879-80	1889-90	1899-1900	1902-03
South Central Division	$4,854,834	$4,872,829	$10,678,680	$14,753,816	$18,193,734
Kentucky	1,075,000	1,069,030	2,140,678	3,037,908	2,662,863
Tennessee	758,000	744,180	1,526,241	1,751,047	2,159,444
Alabama	370,000	500,000	890,000	923,464	1,057,906
Mississipp	950,000	830,705	1,109,575	1,385,112	1,868,544
Louisiana	531,834	411,858	817,110	1,135,125	1,551,232
Texas	650,000	1,030,000	3,178,300	4,465,253	5,682,123
Arkansas	520,000	287,056	1,016,776	1,369,810	1,550,607
Oklahoma	.....	.....	.....	686,005	1,170,409
Indian Territory	.....	.....	.....	.....	481,516

Table No. 16—A	Amount raised for each person 5 to 18 years of age	Amount raised per adult male
North Central Division	$12.75	$12.55
Ohio	14.06	12.76
Indiana	11.86	11.45
Illinois	14.16	13.34
Michigan	12.76	11.61
Wisconsin	11.21	12.05
Minnesota	13.81	14.02
Iowa	15.51	15.52
Missouri	8.43	9.00
North Dakota	17.18	17.25
South Dakota	14.73	16.25
Nebraska	13.11	14.03
Kansas	10.36	10.92

Progress of school expenditure; total amount expended for schools

B	1870-71	1879-80	1889-90	1899-1900	1902-03
North Central Division	$28,430,033	$35,283,635	$62,823,563	$86,654,876	$99,115,625
Ohio	6,831,035	7,166,963	10,602,238	13,335,211	15,691,039
Indiana	2,897,537	4,491,850	5,245,218	8,182,526	9,216,082
Illinois	6,656,542	7,024,092	11,645,136	17,757,145	20,266,618
Michigan	2,840,740	2,775,917	5,349,366	7,207,691	8,777,252
Wisconsin	1,932,539	2,177,023	3,801,212	5,493,370	7,009,159
Minnesota	960,558	1,328,499	4,187,310	5,630,013	6,774,336
Iowa	3,269,190	4,484,043	6,382,953	8,496,522	9,834,319
Missouri	1,749,049	2,675,364	5,434,962	7,816,050	8,363,128
North Dakota	23,000	245,000	626,949	1,526,090	2,140,365
South Dakota			1,199,630	1,605,623	1,847,813
Nebraska	365,520	1,108,617	3,376,332	4,403,222	4,300,751
Kansas	904,323	1,818,337	4,072,907	4,622,364	4,804,563

Table No. 17—A	Amount raised for each person 5 to 18 years of age	Amount raised per adult male
Western Division	$20.16	$14.28
Montana	20.68	10.99
Wyoming	12.02	7.01
Colorado	29 82	21.41
New Mexico	5.18	5.63
Arizona	10.76	7.76
Utah	15.18	20.37
Nevada	27.05	13.76
Idaho	18.06	15.51
Washington	22.25	14.91
Oregon	18.75	14.13
California	21.42	13.35

Progress of school expenditure; total amount expended for schools

B	1870-71	1879-80	1889-90	1899-1900	1902-03
Western Division	$2,244,329	$4,267,673	$10,213,815	$17,212,614	$21,008,573
Montana	35,600	78,730	364,084	923,310	1,236,253
Wyoming	7,000	28,504	225,000	253,551	253,551
Colorado	67,395	395,227	1,681,379	2,793,648	3,100,855
New Mexico	4,900	28,973	85,000	343,429	300,531
Arizona	.....	61,172	181,914	299,730	397,072
Utah	117,000	132,194	394,685	1,004,757	1,406,096
Nevada	85,000	220,245	161,481	224,628	209,484
Idaho	19,003	38,411	169,020	400,043	826,598
Washington	35,000	112,615	958,111	2,375,753	3,580,742
Oregon	160,000	307,031	805,979	1,594,420	1,526,366
California	1,713,431	2,864,571	5,187,162	6,909,351	8,170,165

TABLE 18.—(*1*) *Expenditure per pupil (based on average attendance); (2) average daily expenditure per pupil; (3) percentage analysis of school expenditure*

	Expenditure per capita of average attendance				Average daily expenditure per pupil		Per cent of total expenditure devoted to—		
	For sites, buildings, etc.	For salaries	For all other purposes	Total per pupil	For salaries only	Total	Sites, buildings, etc.	Salaries	All other purposes
1	2	3	4	5	6	7	8	9	10
United States	$4.19	$14.21	$4.35	$22 75	*Cents* 9.7	*Cents.* 15 5	18.4	62.5	19.1

School expenditure per capita of—
(a) population, $3.15; (b) average attendance, $22.75.

					Cents	*Cents.*			
North Atlantic Division	$8.09	$20.16	$6.94	$35.19	11.3	19.7	23.0	57.3	19.7
Maine	4.10	13.24	2 70	20.04	9.3	14.0	20.4	66.1	13.5
New Hampshire	2.92	15.02	5.75	23.69	10.7	16.9	12.3	63.4	24.3
Vermont	3.93	14.47	4.05	22.45	9.3	14.5	17.5	64.5	18.0
Massachusetts	7.24	23.67	8.13	39.04	12.7	21.0	18.6	60.6	20.8
Rhode Island	8.20	21.86	6.51	36.57	11.3	19.0	22.4	59.8	17.8
Connecticut	4.73	18.57	5.28	29.58	9.8	15.7	16.0	62.8	21.2
New York	12.14	25.82	6.66	44.62	13.7	23.7	27.2	57.9	14.9
New Jersey	7.09	19.96	7.08	34.13	10.4	17.9	20.8	58.4	20.8
Pennsylvania	5.88	14.80	7.47	27.55	8.5	16.6	21.4	51.5	27.1

School expenditure per capita of—
(a) population, $4.44; (b) average attendance, $35.19.

TABLE NO. 19

State or Territory.	Expenditure per capita of average attendance				Average daily expenditure per pupil		Per cent. of total expenditure devoted to—		
	For sites, buildings, etc.	For salaries	For all other purposes	Total per pupil	For salaries only	Total	Sites, buildings, etc.	Salaries	All other purposes
1	2	3	4	5	6	7	8	9	10
					Cents.	*Cents.*			
South Atlantic Division	$1.15	$7.57	$1.45	$10.17	6.4	8.6	11.3	74.	14.3
Delaware	3.13	11.05	3.75	17.93	6.5	10.5	17.5	61.6	20.9
Maryland	.94	15.08	2.79	18.81	7.9	9.9	5.0	80.2	14.8
District of Columbia	8.66	25.10	6.73	40.49	14.4	23.3	21.4	62.0	16.6
Virginia	0.92	7.46	1.13	9.51	6.1	7.8	9.6	78.5	11.9
West Virginia	2.42	9.47	3.57	15.46	7.7	12.6	15.7	61.2	23.1
North Carolina	0.52	8.78	1.36	5.66	4.3	6.5	9.2	66.7	24.1
South Carolina	0.34	4.38	0.28	5.00	4.8	5.4	6.7	87.8	5.5
Georgia	0.76	6 33	0.13	7.22	5.4	6.1	10.5	87.6	1.9
Florida	1.31	7.90	1.20	10.41	7.6	10.0	12.6	75.9	11.5
School expenditure per capita of—(a) population, $1.34; (b) average attendance, $10.17.									
					Cents.	*Cents.*			
South Central Division	$0.83	$7.24	$0.85	$ 8.92	6.9	8.4	9.3	81.1	9.6
Kentucky	0.95	7.16	0.48	8.59	8.0	9.5	11.1	83.3	5.6
Tennessee	0.62	5.17	0.51	6.30	5.4	6.6	9.9	82.1	8.0
Alabama	*a*	3.96	0.45	4.41	3.9	4.3	*a*	89.7	10.3
Mississippi	0.23	6.75	1.03	8.01	5.5	6.5	2.9	84.2	12.9
Louisiana	0.64	8.06	1.26	9.96	6.2	7.7	6.4	80.9	12.7
Texas	1.43	10.66	0 69	12.78	9.2	11.0	11.1	83.5	5.4
Arkansas	0.64	6.22	0.41	7.27	6.8	7.0	8.8	85.6	5.6
Oklahoma	2.98	8.29	2.62	13.89	9.3	15.6	21.4	59.7	18.9
Indian Territory	*a*	14.61	17.86	32.47	9.2	20.5	*a*	45.0	55.0
a Included in "expenditures for all other purposes."									
School expenditure per capita of—(a) population, $1.22; (b) average attendance, $8.92.									
					Cents.	*Cents.*			
North Central Divisio	$3.96	$15.00	$5.02	$23.98	9.6	15.3	16.5	62.6	20.9
Ohio	2.73	16.36	6.45	25.54	9.9	15.5	10.7	64.0	25.3
Indiana	2.37	13.76	5.97	22.10	9.4	15.1	10.7	62.3	27.0
Illinois	5 76	16.30	4.78	26.84	10.2	16.8	21.5	60.7	17.8
Michigan	3 69	13.23	4.96	21.88	8.0	13.3	16.9	60.5	22.6
Wisconsin	4.73	15.39	4.73	24.85	8.5	13.8	19.0	61.9	19.1
Minnesota	6.70	16.79	2.48	25.97	10.6	16 4	25.8	64.6	9.6
Iowa	3.42	17.42	6.60	27.44	10.9	17.1	12.5	63.5	24.0
Missouri	3.68	11.34	2.96	17.98	7.8	12.3	20.5	63.1	16.4
North Dakota	6.22	17.86	13.71	37.79	11.9	25.2	16.5	47.2	36.3
South Dokota	3.01	15.50	6.86	25.37	11.7	19.2	11.9	61.1	27.0
Nebraska	4.29	16.54	4.02	24 85	9.9	14.9	17.3	66.5	16.2
Kansas	1.91	12.12	3.56	17 59	9.6	14.0	10.9	68.9	20.2
School expenditure per capita of—(a) population, $3.61; (b) average attendance, $23.98.									
					Cents.	*Cents.*			
Western Division	$6.15	$20.32	$6.38	$32.85	13.9	22.5	18.7	61.9	19.4
Montana	11.66	20.71	6.91	39.28	19.4	36.7	29.7	52.7	17.6
Wyoming	2.86	18.69	4.72	26.27	17.0	23.8	10.9	71.1	18.0
Colorado	4.55	21.40	9.29	35.24	14.0	23.0	12.9	60.7	26 4
New Mexico	1.62	8.22	1.69	11.53	9.3	13.1	14.0	71.3	14.7
Arizona	5.30	19.35	8.17	32.82	15.1	25.6	16.2	58.9	24.9
Utah	6.05	12.92	7.26	26.23	9.2	18.7	23.0	49.3	27.7
Nevada	2.58	31.80	5.15	39.53	20.4	25.4	6.5	80.5	13.0
Idaho	*a*	13.21	10.83	24.04	10.6	19.4	*a*	54.9	45.1
Washington	14.04	17.96	3.42	35.42	15.5	30.5	39.6	50.7	9.7
Oregon	3.54	16.34	3.89	23.77	10.6	15.5	14.9	68.7	16.4
California	4.90	26.61	6.87	38.38	15.1	21.8	12.8	69.3	17.9
a. Included in "expenditures for all other purposes."									
School expenditure per capita of—(a) population, $4.80; (b) average attendance, $32.85.									

month than the North Atlantic Division to its men teachers ($53.96 against $58.64).

The next set of tables (Nos. 12 to 19) shows the expenditure per capita of population and attendance for various school purposes. In the whole United States the amount expended for buildings and sites is $4.19 as against $14.21 for salaries. But the North Atlantic Division, having the most wealth and the highest rate of earnings per day, leads with an average of $8.09 for buildings and $20.16 for salaries of teachers. The South Atlantic Division spends about one-seventh as much for buildings and sites and a little more than one-third as much for salaries. The Gulf States expend one-tenth as much for buildings as the North Atlantic, and a trifle more than one-third as much for salaries of teachers. The North Central Division expends not quite one-half as much per capita for buildings and sites as the North Atlantic Division, and only three-fourths as much as the North Atlantic for salaries. The Western Division expends a trifle more for salaries and about three-fourths as much for buildings.

It is well known that the number of persons five to eighteen years of age is a larger fraction of the whole population in the South than it is in the North—there are more children and fewer adults to support them. The total amount expended for schools amounts on an average for the whole nation to $11.17 for each person five to eighteen years of age, $11.32 for each adult male. In the North Atlantic Division the amount raised for each person between five and eighteen years of age is $18.13. The amount for each person of school age (5 to 18) in the South Atlantic Division is $4.18, and the amount per adult male is $5.56. The amount raised in the South Central Division is only $3.94 for each person of school age. The amount for each person of school age in the North Central Division is $12.75. The Western Division in its amount per individual of school age exceeds that of the North Atlantic, being $20.16 for each person. The number of children of school age in the population is a larger per centum of the whole than it is in the North Atlantic or any of the other divisions.

It is noteworthy that all of the Southern States are increasing their *pro rata* of manufactures—steam and water power are re-enforcing the power of the hand. North Carolina has doubled its manufactures per inhabitant in the last decade, rising from 3 cents per day to 6.1 cents per day, and the whole South Atlantic Division has increased from 7.5 cents per day to 9.7 per day for each inhabitant. But agriculture has gained in the same ratio and keeps much in advance of manufactures.

In the South Central Division, the great cotton States, agriculture predominates still more over the manufactures, altho the manufactures have increased 17 per cent. for each individual on an average.

For the whole nation the gain per individual in manufactures has been 21 per cent.

A political economy that sees the gradual, but continuous growth of man's conquest of nature for human purposes; that sees how man's use of the instruments of civilization unites all peoples into one by commerce; a political economy that avails to elevate all who study it into a theoretical understanding of the ultimate purpose of the conquest of nature; which is to unite all peoples by religion into a participation of the same view of the world—the Christian view of the world,—this sort of political economy is *not* the dismal science of Malthus and Ricardo, of Karl Marx and Henry George, of Schopenhauer and Nietzsche.

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VI

DISCUSSIONS

THE CONCEPT OF ADJUSTMENT AS APPLIED TO EDUCATION

The basal conceptions involved in the theory of evolution have constantly gained an ever wider acceptance, until to-day they have become the common property of all departments of human thought. It is therefore not to be wondered at that education, in its endeavor to establish itself on broader philosophic basis and to attain to the dignity of a science, finds a peculiar attractiveness in employing a terminology and in accepting a point of view that other fields of speculation and investigation have found so helpful. And there can be no doubt as to the fundamental legitimacy of this procedure. Education, as one of the most important branches of the science of mind, should acknowledge that consciousness has been subjected to the same general laws in origin and developement as has the extra-mental world. There is much in favor of the assertion that human intelligence has grown and attained dignity and worth according to the well-defined principles which find their analogue in the field of biology, and that educational progress, as a part of this development, has been brought about by similar laws.

There is danger, however, in using scientific terms inexactly and without understanding their full import, especially in a field where exactness is difficult and perhaps impossible. So education in common with kindred subjects needs to be particularly careful as to its conceptions and to use no term, however scientific, unless it is able legitimately to appropriate such a term for its own.

A favorite description of the nature of education now current is that it is adaptation or adjustment to environment. In a sense no one can deny the truth of this view, and yet the conception here employed should not be used without fully considering its meaning, scope, and limitations. It cannot be as-

sumed that such a conception is in itself capable of furnishing a complete science of education. Indeed, without amplification and restatement, it not only is insufficient but may become even misleading and in a sense untrue. This the following discussion aims to set forth.

In the first place, when we speak of adaptation or adjustment we tend to emphasize the conditioning environment in which the organism to be educated develops, and we often forget to give due weight to the part which the individual as such, with its original push-up, plays in its evolution. Yet the organism is not a complete slave to the environment; it does not always entirely conform to its external conditions; indeed, for a time it may override them. The internal factor counts as well as the external. The ignoring of this subjective element in evolution is the serious defect in Darwinism, a defect too often pointed out to require extended criticism here.

It is enough to say, for education this internal factor becomes of great importance, and must always be counted with. No one at all acquainted with the history of education can seriously maintain that the environment, as ordinarily understood, has been the sole factor of growth in this particular realm of conscious activity. Nowhere in the entire field of human progress has the internal counted for more. Indeed, it is what man wants to be, rather that what the world about him really is, that has given form to his educational theories and practice, and if these have adjusted themselves to an environment, that environment has been largely created from within,—it is not so much a world of cold facts as a realm of values. The truth of this must be admitted by all who have not become completely impregnated with that pseudo-psychology that regards man as a mere nervous mechanism ingeniously devised for turning stimuli into reactions, and which finds no difficulties in explaining the entire psychic life in terms of physics and mechanics. Can we account for any of the great educational reforms that from time to time have seized upon and possessed a people solely in terms of a conditioning environment? Environment cannot alone produce that which transcends it and sets it aside. The internal factor plainly must be reckoned with, and an educational philosophy that does not take it into

account is one-sided and incomplete, while a science of education that considers the laws that govern the external factors only, and that finds no equations by which to compute the internal, is unable to account for all the phenomena that it may properly investigate.

In the second place, the only adjustment which evolution considers is an adjustment to an environment immediate and present, an environment that selects without real choice and plans without conscious purpose. This environment works by favoring those variations in an organism which are best fitted to enter into harmony with immediate external conditions. Other variations may be ideally more worthy or better adapted to a future environment, but that is not the test applied. The future suitable and desirable must always yield to the present necessary. We may use the term purpose and end if we see fit in describing such selection, but we must remember that we read into the environment a choice which it does not really possess.

How far such an environment differs from that to which education seeks to adapt the individual need hardly be set forth. It is the future environment that education, whether it be practical or theoretical, material or spiritual, always considers. How often has it placed the child out of harmony with the present in order to secure his adaptation to the future non-existent and ideal. If the test of immediate adaptability were brought to bear, the gamin would be better educated than the schoolboy. However, only among animals lower than man do we find such a scheme of immediate adjustment. Here the test of education is conformity to a constant and relatively simple environment, a conformity becoming habitual and unvarying. This, indeed, is the process of evolution in the whole realm of life below man. You may call it education if you choose, but the term has too great an extension to furnish a clear conception of the essence of education as ordinarily understood. It seems better to say that nature as a whole trains, while conscious individuals, capable of forming judgments of worth and evaluating life in terms of its highest meaning, educate. The dog is trained by an immediate environment to do a few things well, interpreted in terms of that immediate

environment. The child should be educated to do many things well, interpreted in terms of a future environment. Have not many tragedies in education resulted because the child has been simply trained and not educated? He has learned a few simple reactions that fit him to his present environment, but he has not been developed to adjust himself to a complex and changing environment, which is never entirely actual and often largely potential. A leading American thinker has aptly described education as the ability to land on one's feet. Such ability the adjustment to an environment purely immediate and changeless would render impossible.

Again, in the whole realm of nature below man, the environment created by consciousness, itself the internal externalized, the ideal made real, the future become present, is wanting. It is this conscious environment, however, which reinterprets the law of the survival of the fittest and brings into the field of evolution a new meaning to adjustment and adaptation. The fittest here is not that which merely survives, but it is that which ought to survive—survival as such being no longer the test of worth. The adjustment demanded is not the adjustment to a brute fact, but to a world of meaning, present and yet remote, real but not ideal. It is to such an environment as this that the truly educated man finds himself in adjustment. But he is not simply adjusted to it; indeed, he seeks to modify it and contribute to its worth and meaning. Here perfect adjustment is no longer the criterion of adaptation and survival, as it is in all nature below man, for perfect adjustment would mean stagnation and finally intellectual and moral death. The brute is best adjusted to its environment that finds itself in complete harmony with this environment, but the test of educational adjustment is often a partial lack of harmony with external conditions.

To state briefly what the above pages have attempted to set forth, the concept of adjustment as a term involving the essence of educational philosophy, is, as ordinarily understood, defective and insufficient, because it does not take into consideration the ideal, which is the true source of, and final explanation for, all educational values. Suppose we say that education is adjustment to environment, then immediately comes the question,

Adjustment to what environment? The answer to this query can be given only when we arrive at the educational ideal. So your philosophy of education must first formulate the ideal before it can discuss intelligently the problem of adjustment, either from a normative or a historical standpoint.

Would not the Spartans have agreed that education was adjustment to environment, if you had allowed them to define that environment in terms of their ideal, military prowess? The Athenians, too, would have consented on similar terms, insisting that the true environment was not only physical but intellectual and æsthetic as well. Plato would have found our definition in harmony with his philosophy, but would have told us that we should not confuse a real environment with this world of shadows, but that we should prepare the youth for association with the world of changeless and eternal ideas, for Plato the sole reality. The Epicureans, as well, would have found no fault with the conception of adaptation, but would have insisted that the only environment to be considered was one giving hedonic enjoyment. Likewise the Stoic would have consented, but would have told us that the environment to which we were to conform was our highest self objectified in a world of pure reason. The Neo-Platonist, so badly adjusted to this world that he sought in the Beatific Vision to escape it, would have been quite content to subscribe to our terminology, but he would have understood by it adjustment to the Ineffable One. And so too the schoolmen of the Middle Ages would have agreed with a similar thought that the true environment was in a world beyond. Education in terms of our definition would have meant to the Renaissance, in its revolt from mediævalism, adjustment to a present world not of cold facts but of æsthetic realities; and so on thru the list until we come to our own time with its exaltation of practical utilitarianism. Education is always adaptation, but it is to an ever-changing environment determined by the meaning which the conscious ideal gives to this environment.

The practical business man of to-day conceives the real environment with which the child is to be brought into harmony in terms of his ideal, for he is an idealist of one sort, at least. The man who sees in life more than crass utilitarianism

finds another environment equally real to which he demands adaptation; and so the struggle not merely for adaptation to environment, but for determining what the environment is to which the adjustment is to be made, goes on.

Our educational systems can never start with simple facts, they do not exist. The only facts are those which the human mind interprets. We may strive to be as accurate as we choose, we may employ terms made venerable by use in science, but we can never hope to frame an educational philosophy in any concepts which do not take account of the ideal. Indeed, altho we may be strict evolutionists, we must recognize that evolution, if it means anything more than change, is based on an ideal incapable of proof—the ideal of progress.

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A HIGH-SCHOOL MATHEMATICS CLUB[1]

It will be well to explain in starting that the club whose workings are here described was not formed in a public high school, but in Shattuck School, Faribault, Minnesota, a private school for boys. The course in this school, however, is of the same grade as that of a good high school, and the boys are of the same age. Work could be done along similar lines, I believe, in any high school, and for that reason, secondary-school teachers may be interested in our experience.

This Mathematics Club was organized last year, as the result of a desire on the part of some of my students to investigate certain matters connected with mathematics which do not properly find a place in the usual classroom work. It was made up of those members of the senior class who were taking the college preparatory course in mathematics, numbering about a dozen. As instructor of the class I was chairman, *ex officio*, and the only teacher usually present at the meetings.

The club met every two weeks and devoted itself to a study of the history of mathematics, its famous or interesting problems, mathematical puzzles, fallacies, card tricks, anything in

[1] Paper read before the Central Association of Science and Mathematics Teachers, November 25, 1904.

fact that was capable of a mathematical solution or explanation, and that promised to be entertaining. A club of boys would not thrive if the meetings were dull. The meetings were held in our classroom at 7.30 on the evening of our weekly holiday (Wednesday) and were supposed to adjourn at nine o'clock. By this time, however, the boys were usually so interested in some discussion as to be willing to remain in session as long as the school regulations would allow. To make it easier for the cadets to spare the time for these meetings it was understood that no preparation would be expected from them for the next day's lesson in algebra. Each of our evenings was given up to some general subject, and reports were prepared on three or four special topics by as many of the members. This required that each one of the members should work up such a report about every third meeting, or once in six weeks. At each meeting the program was announced for the following one, and thus those who were to take part had two weeks' time in which to prepare.

We had a small reference library in our recitation room which contained a few books that would yield some information on the subjects which we were interested in. Among the most useful were Ball's, Fink's, and Cajori's Histories of Mathematics, Klein's *Famous problems in geometry*, Fine's *Number system of algebra*, Ball's *Mathematical recreations*, Heath's series of *Mathematical monographs*, and several of the publications of the Open Court Publishing Co. Besides the books spoken of we collected perhaps a dozen or twenty popular magazine articles on special topics in our field, as, for example, one by Professor Newcomb on the *Fairyland of geometry*, another on *The Fourth dimension*, etc.

As boys of high-school age are new to investigations of the kind that we proposed, it was necessary to help them in the preparation of their reports. They required rather explicit directions and suggestions as to how to treat a given topic, what to include, and more especially what to leave out. They were given this help in the form of brief outlines of their topics together with references to two or three of the books available, often by pages. These reports were variously presented by the different students. Some of them could talk extemporaneously

from notes, making use of illustrations previously placed on the blackboard. Others preferred to mark certain pages or paragraphs and to read directly from the books what they wished to tell us. Still others, on certain subjects, read carefully written papers, which they were not long in discovering might be submitted to their instructor in English, in lieu of their monthly theme. One student even developed one of his reports into his graduating thesis.

The plan of our meetings was that each of these reports should consume fifteen minutes or so, and be followed by an informal discussion in which anyone might ask questions or raise objections, to be met by the one presenting the report. If I could add anything of interest that had not been brought out, I did so briefly, but the central idea of the whole scheme was to have the boys do most of the talking. My function was to preside at the meetings, to keep the interest alive, and to try and preserve that happy mean of informality which should put the boys at their ease, and yet maintain a certain dignity in our discussions. Of course we could consider only such subjects as would be intelligible to secondary-school pupils, and these only in an elementary and somewhat superficial way. These students in our senior class had finished plane and solid geometry the year before, and their studies for this year were higher algebra and trigonometry. Our discussions, then, were restricted to subjects requiring no further acquaintance with mathematics. To give an idea of the various subjects considered in this Mathematics Club, I can do no better than to refer briefly to the programs of our twelve meetings of last year. And I may be pardoned, perhaps, if I describe the work of one or two of these meetings somewhat in detail, in order to show the scope of our investigations.

Our first evening was devoted to the "Early History of Geometry," the three principal topics being: 1st, "The beginnings of geometry"; 2d, "Early Greek geometry"; 3d, "Golden age of Greek geometry." In the first paper was considered the extent of geometrical knowledge among the early nations, the knowledge of astronomy among the Babylonians, and of mensuration and surveying among the Egyptians, the Ahmes value of Pi, and his incorrect statements for the

area of the trapezoid and isosceles triangle, the orientation of their temples, the rope stretchers, etc. In the consideration of the "Early Greek geometry" the marked tendency of the Greek mind toward logic and the appreciation of form was referred to as accounting for this early development among them of geometry as a science. Thales was referred to and the theorems attributed to him, with their probable proofs. There was also a brief biography of Pythagoras, a description of his school and the brotherhood of the Pythagoreans. In the third paper on the "Golden age of Greek geometry," Euclid and his work were similarly discussed, his famous "Elements" described, and its influence on the modern study of geometry pointed out. Apollonius, Archimedes, and perhaps one or two later names were mentioned.

For the material for these papers the boys were referred to Myers' *Ancient history*, the histories of mathematics, Smith's *Teaching of mathematics*, Allman's *Greek geometry from Thales to Euclid*, and one or two pamphlets and magazine articles.

As I have said before, the treatment of their topics was suggested to the members of the club by outlines which I prepared for them. In order to show the extent of the help thus furnished the students, and as an example of how fully we were able to go into a subject, I will give the outline for the work of our second and third meetings devoted to the "history of arithmetic and algebra."

THE HISTORY OF ARITHMETIC AND ALGEBRA

I. Among the Ancient Nations.
   a. The Egyptians: Ahmes' papyrus, its antiquity, some of its problems, Egyptian fractions.
   b. Greek Arithmetic and Algebra: Not so highly developed as geometry, Greeks interested in theory of numbers rather than calculation (examples). Computations on dust board (explained). Diophantus and equations.
   c. Roman Arithmetic: No algebra. Arithmetic, only enough for commercial purposes. Use of abacus (illustrated).

II. Among the Hindus and Arabs.

a. The Hindus (sixth and seventh century). Great computers. Arithmetic and algebra their specialty, as geometry for Greeks. Extent of their mathematical knowledge. Negative numbers, irrational numbers, zero.

Their methods in Arithmetic, false position, inversion. Examples of their poetically stated problems.

b. The Arabs (eighth to the tenth century). Brief history. Great scholars of their time. Arabs as teachers and preservers of Greek and Roman culture. Text-book writers.

The Name Algebra. Syncopated Algebra.

III. Early European Arithmetic:

General education in the Middle Ages. Schools of Church and Monastery. Universities (quadrivium, trivium). Rechenschulen of Hanseatic League.

Examples of four fundamental operations as performed in the Middle Ages; multiplication by Napier's Rods, division by Scratch Method.

IV. Development of Symbolic Algebra.

Algebra originally rhetorical: work expressed fully in words, no symbols.

Syncopated Algebra: abbreviations for the words, still few symbols, Diophantus (330 A. D.), the Arabs.

Symbolic Algebra: Took modern form from Vieta (1600).

Examples of solution of an equation in:

1. Old rhetorical form.
2. Syncopated form.
3. As stated by Vieta.
4. In twentieth-century symbols.

Advantages of our symbols.

V. History of Common Symbols of Operation.

Various devices used at different times to express powers, roots, equality, the four fundamental operations, etc., with their origin and dates.

First use of the present symbols.

It is perhaps needless to say that these three meetings on

the history of arithmetic, algebra, and geometry opened the eyes of the students to the process of gradual development in these sciences. While I am sure that they never enjoyed the study of any history more than this, I am equally sure that it gave them a larger appreciation of the field of mathematics.

Our next two meetings were devoted to the "Famous problems of geometry and their history." Among the problems considered in these two meetings were: The Pythagorean Theorem and Its Proofs; Squaring the circle; Trisection of an Angle; Duplication of the Cube; Area of a Triangle; Regular Inscribed Polygons.

The following meeting was given up to "Mathematical Puzzles and Fallacies." 1st, "Elementary Numerical Puzzles," 2d, "Algebraic Fallacies," for example, to prove: 1 equals 2, to prove 1 equals -1, to prove 1 greater than 2, etc. 3d, "Geometrical Fallacies:" to prove an obtuse angle equal to a right angle, any triangle is isosceles, part of a line greater than the whole line, and others of the same kind, with which most teachers are familiar. In presenting these puzzles and fallacies, the one reading the paper would first propose them to the rest of the members for solution; if they failed to solve the puzzles, or point out the fallacy within a reasonable time, it was then explained to them.

In the next meeting, the seventh, we considered in a similar way, 1st, "Mechanical Puzzles," 2d, "Card Tricks," 3d, "Problems on a Chess Board," all of which involved some mathematical principle of number or position. In each case as before, after mystifying his audience, the conjurer was required to give away his trick, and to explain the mathematical principle involved.

The program for our eighth meeting was: "Curious Properties of Certain Numbers," with the following special topics: 1st, "Interesting Properties of the Number 9;" 2d, "Perfect Numbers, Divisibility of Numbers, Prime Numbers," etc.; 3d, "Some Theorems in the Theory of Numbers," for example, Fermat's "Last Theorem," Theory of Prime Numbers, etc. In these later cases we could do little more than state the theorem and illustrate it by an example.

In our ninth and tenth meetings we took up the subject of

"Number Systems and Numerals." As these proved to be, perhaps, the most interesting and suggestive of our meetings to the student members of our club, I will outline them a little more fully.

Number Systems and Numerals

I. Primitive Systems of Numeration.
   First notions of number, counting, etc., among animals, among savages.
   Gesture symbols, finger reckoning. Early written symbols.
   Systems in use among primitive races.
      Decimal.
      Quinary (scale of 5).
      Vicigesimal (scale of 20).
      Binary (scale of 2).
      (scale of 11).

II. Development of our Decimal Positional System.
   Due to our Ten Fingers.
   Value of idea of position, of zero, discoveries of the Hindus (date).
   Advantages of our system (illustrate by multiplying two numbers in Roman notation).
   Disadvantages of decimal as compared with duodecimal system.

III. History of Arabic Numerals and Other Number Symbols. Babylonian, Egyptian, Greek Symbols (illustrate). Awkwardness of Roman system.
   History of development of so-called Arabic Nnmerals. (Hindu origin).

IV. Problems in Other Systems.
   Numbers written in other systems. Multiplication tables in other systems.
   Problems in addition, division, etc., with numbers expressed in scale of 9, scale of 5, scale of 2, etc.
   Problems in a non-positional system, like Greek or Roman, hence necessity for use of abacus.

V. Number Systems of Algebra.
   Fractions:—Egyptian unit fractions; Babylonian frac-

tions—denominator always 60; Greek and Roman fractions; Decimal fractions (recent date).

Irrational numbers:—First use, brief history, etc.

Negative numbers:—The same.

Imaginary numbers:—The same.

The eleventh meeting, on "Mathematical Curiosities," contained such topics as:

1st, "The Fatality of Numbers." Curious traditions attaching to 3, 7, 9, etc.; 2d, Large Numbers; 3d, Magic Squares of Various Kinds and Their Formation.

The twelfth and last meeting was devoted to the "Fairyland of Geometry," and considered such questions as, 1st, "Non-Euclidian Space;" 2d, "Infinity;" 3d, "The Fourth Dimension." In such subjects as these we were on rather dangerous ground, but I tried to steer a safe course. Even if the students did not acquire perfectly clear notions about these rather vague matters, I felt that it might be worth while, at least, to set them thinking.

This was perhaps the most valuable result of the work of our club—it set the boys to thinking. They found that there was more that was interesting in the dry subject of mathematics than they had dreamed. There was not a member of the club but confessed that his attitude toward mathematics had undergone a change since our first meeting.

Our investigations were not very profound, to be sure, and will result in no contribution to the sum of mathematical knowledge, but the boys enjoyed our meetings, and, I think, profited by them, and, as these were the two distinct objects of this Mathematics Club, I feel that it proved itself worth while.

CHARLES W. NEWHALL

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FARIBAULT, MINN.

THE NEW SUBJECTS OF STUDY: ARE THEY "FADS"?

The problems to be solved by the school are extremely difficult. The ever-increasing complexity and intensity of modern life have necessarily resulted in greatly increasing the number and variety of studies in the schools. For, since the school epitomizes the life surrounding it, it must take on the

complexity of that life. It is impossible for the school, with the colossal task of fitting the rising generation for the work of adult life, to be anything less than broad in its scope and complicated in its organization. And this is especially true in our own country because of the increasing faith of the people in the ability of the public schools to provide for industrial and social efficiency in the body politic. The school is, therefore, expected to do far more than it has ever been expected to do before, and is carrying such a variety of weighty burdens as our forefathers never dreamed of laying upon the school in their times. Relief must be sought somewhere. The school cannot continue to teach all that it has been teaching in the past, and at the same time adapt its teaching to the rapidly developing life of the present. It cannot easily diminish the number of studies, because each study typifies some aspect of physical or social life. Evidently, then, relief is to be found, not in diminishing the number of studies, but in limiting the number of topics and facts to be taught in each study. This can be done. This must be done, or the overtaxing of both teachers and pupils is inevitable.

The result of the omission of non-essentials and worthless details means the use of a comparatively small number of fundamental facts and principles, which should be thoroly mastered. Not quantity, but quality, is the keyword. This means putting aside as useless, for the imperative demands of the present, many—very many—things in geography, arithmetic, history, grammar, and other studies that in the simpler days long since gone by found an honored place in the curriculum. Some of these things once had educational value, others had little value, and others still had no value at all. But whether they had or not, they must now give place to things that are more fruitful in developing individual power, moral insight, and adaptation to the scientific and social tone of present life. New times make new demands, and this is quite as true of the school as it is of the greater world reflected in the school. In all departments of life old methods and old machinery are being constantly discarded, because men find new methods and new machinery that will do better the required work.

Of course the failure to teach some facts and do some things

that tradition has stamped with approval, means that pupils in the schools of to-day do not know those special facts and cannot do those particular things. For example, they cannot locate as many places in geography, they cannot do certain problems in arithmetic, they do not know certain events in history—all of which the traditional school taught. In so far as there is failure in these respects there is of course a loss. But that is small when compared with the gain. It is a great mistake to put all the emphasis upon the negative side—upon what has been lost. Rather should attention be focused upon the positive side—upon what has been gained in the process of substituting for useless detail significant facts and vitalizing principles that have a distinct educational value in revealing the pupil to himself, in giving him knowledge of his environment, and in showing him how to adjust himself to it.

Nor should it be forgotten that the body of human knowledge typified in each study is much greater now than it was fifty years, or even twenty-five years ago. Every generation makes new discoveries and brings to light new truth. This new truth is the rightful inheritance of the next generation,—a fact that society recognizes in a practical way by requiring the school to incorporate such truth in the curriculum. Now this incorporation must be made in one of two ways,—in the form of a new study or as an important addition to the facts and principles of an old study. In either case, there must be a new adjustment,—an adjustment that will inevitably result in adopting a different principle of selecting the topics and facts to be taught. It follows, then, as stated above, that the geography and the history, as taught in the schools of this generation, are different from the geography and history as taught in the schools of the last generation.

WILBUR F. GORDY

SUPERINTENDENT OF SCHOOLS,
SPRINGFIELD, MASS.

From the annual report for 1904 of the Superintendent of Schools, Springfield, Mass.

VII

REVIEWS

A history of Columbia University, 1754–1904. Published in commemoration of the one hundred and fiftieth anniversary of the founding of King's College. New York: The Columbia University Press, 1904. xiii+493 p. $2.50 net.

This work was prepared under the editorial supervision of a committee consisting of Brander Matthews, John B. Pine, Harry Thurston Peck, Munroe Smith, and Frederick P. Keppel. Nothing of commonplace could well come from such a group of men, and the volume which they have given us is indeed a notable production.

The contents fall into three general divisions. Book One presents the history of King's College and Columbia College, by Dean Van Amringe; Book Two, the history of the University and its non-professional graduate schools, by Professor Munroe Smith; and Books Three to Five, an account of the professional schools, the affiliated colleges, and the library, by several different writers.

Dean Van Amringe has evidently given himself *con amore* to the study of Kings-Columbia annals. This is at least the third time that he has put forth an historical account of the College. The present account does not differ greatly from his excellent sketch published in *Universities and their sons*, in 1898. It contains some additional matter relating to the earlier periods. In the part relating to the later periods various omissions appear, which represent, in fact, only the transfer of matter from the history of the College to the history of the University and of other component parts of the University. There is a very interesting chapter on college life, and one on the beginnings of the administration of President Butler. The narrative, as a whole, gives abundant evidence of that personal interest in the institution and that attention to the scattered records of its development which we look for in such a history. If any adverse criticism is to be expressed, it is that this Kings-Columbia history is not presented, to any

great extent, in its relations with the general movement of American education. Chapters Ten and Eleven, for example, which trace the development of the College from 1830 to 1864, seem more a chronicle than a history. The strivings and achievements of Columbia during this period can be understood and appreciated, only when seen against such a background as the highly significant educational movements of that time might supply. Limitations of space are doubtless responsible in large measure for this defect.

Two documents of great historical value which are analyzed, and in part reproduced in these chapters, are the report rendered in 1810 by a committee of the trustees, which discussed briefly the purpose of the College system, and proposed a revision of the existing statutes (p. 89 ff.), and the statute adopted in 1857 introducing changes into the curriculum of that period (p. 134 ff.). The statute of 1857, which marks an early stage in the development of the University system, receives further notice in Book Two (p. 212 ff.). It is peculiarly interesting because of the fact that on a prescribed curriculum, extending thruout the junior year, it erected a senior curriculum offering a choice between three groups of studies, in letters, science, and jurisprudence.

Book Two will be generally recognized as the organic center of the work. It is the part, too, which contributes most to an understanding of American education. The story here told of the expansion of the College into a University, which should include the College and give it a new meaning thru new relationships, is broadly typical of the tendencies which have brought forth other American universities. It is interesting to note the way in which our American universities have gradually defined themselves in the process of making themselves. In this survey of the twin processes of making and definition, as seen in the development of Columbia University, we have one of the most illuminating accounts which have yet appeared of the meaning of the University in American education. The conception of the University, as a center of pure research and a training school in the methods of research, is here found united with the earlier conception of the University as a group of faculties, one of them a faculty of liberal arts, and the

others professional faculties. The interaction of these two conceptions is seen to be immensely significant; the professional schools giving impetus and direction to research, and the graduate studies, which have been so fostered and furthered, becoming in turn of great benefit to professional studies. The ideal of public service is found influencing the extension of studies in political science and related subjects. The admission of engineering and other technical pursuits to the circle of professions for which university preparation shall be provided, appears as a widening of the conception of a university. It lends new interest and meaning to higher studies in pure science. At the same time it leads to an uplifting of these technical pursuits, and so provides a new channel thru which universities may render their proper service to civilization.

"No two experts," says Professor Munroe Smith, "would be likely to give the same answer to the questions: what are the essential elements of the American university? and which of the existing institutions are really entitled to bear the name? Still less agreement would probably be discovered if it were inquired: which are at present the leading American universities? And yet certain points of agreement are emerging. The American university should have at least three of the traditional European faculties, and among these three should be a faculty of philosophy—or, as we have styled it and continue with increasing inaccuracy to style it, a non-professional graduate school. The American university should also be sufficiently American to include training in some of the newer professions, particularly in the chief branches of engineering. Above all, the American university must not only cherish and transmit knowledge; it must also help to increase knowledge and to extend its applications."

It is interesting to compare with this definition that of another Columbia man, Professor Edward Delavan Perry: "These institutions offer to graduate students courses leading to advanced or higher degrees. . . . The existence of such organization for research work by graduates is the test." (In Butler, *Education in the United States*, vol. i, p. 256. Published in 1900.)

The larger conception, which would include professional schools, and among them schools for some of the more recently recognized professions, in every real university system, might withhold recognition from one or two institutions which are commonly included in the briefest lists of American universities. Certainly the close interaction of professional studies with non-professional research, which has been referred to above, is proving to be one of the peculiarly significant things in our university development. The varied forms in which it has made its appearance at Columbia and Harvard and Michigan and other universities, would well repay the making of an extended comparative study. There is hardly a hint of such comparison in this account.

Passages of more than ordinary historical interest found in this second book, are that on p. 208, telling of the proposed charter for an American university drafted by the governors of King's College in 1774; the account of President Barnard's early endeavors looking toward the making of a university (p. 219 ff.); the account, beginning on p. 223, of the part played by the Faculty of Political Science in the development of the university idea; and the account (p. 242-253) of the process of "expansion by treaty," from 1891 to 1904, by which the University has acquired some of its strongest professional schools. In connection with this last-named process, the writer declares that, "it is not saying too much to affirm that it is the Columbia University Council, itself a new thing in university government, that has made educational federations of this new type possible." The organization of this Council in 1890, as an advisory body, composed of representatives of the several faculties, and the subsequent enlargement of its powers, are referred to briefly on p. 237-238. There are bodies holding an analogous position in other universities, and it is not altogether clear in just what particulars it is a new element in university administration; possibly in that it is a small body, representing all of the faculties and in close relations with the president, and is accordingly in a position to exercise a very strong unifying influence.

After summing up the essential elements of an American university in the terms which have already been quoted, Professor

Munroe Smith goes on to say that, " among the institutions that fulfill these conditions, the leading universities are those which have the largest bodies of teachers who are also investigators, and which attract, not by the maintenance of low standards, and the bestowal of easy degrees, but by the educational opportunities they offer and the scientific prestige they have attained, the largest number of students. A comparison based on these assumptions will show that at the present time (1904) there are in the United States nearly a dozen institutions that may fairly be regarded as universities, and that from every point of view Columbia has become one of the two leading universities of the country." (p. 200-201).

The institutional outcome of Columbia's forty or fifty years of university development, and hundred and fifty years in all of academic history, is broadly sketched as follows: "At the opening of its fourth half-century, Columbia, as an educational unity, will consist of eleven faculties, conducting fourteen colleges and schools. In this enumeration the inchoate Faculty of Fine Arts is not included, nor any of the allied institutions that are not subject to the educational control of the University. Classified from the point of view indicated at the beginning of this chapter, Columbia will include (1) two colleges of the familiar Anglo-American type; (2) three non-professional graduate schools, corresponding very closely to the most recent divisions of the German Faculty of Philosophy; (3) nine professional schools, two of which, those of Law and Medicine, correspond to traditional university faculties of the old world, while the remaining seven—the Schools of Mines, Engineering, Chemistry, Pharmacy, Architecture, Journalism, and Teachers College—represent the wider hospitality and more catholic ideals of the American university." (p. 260-261).

This is but a small part of the story of the university as Professor Munroe Smith has told it, but so much may suffice for the present purpose. The story is one that is typical of what has been going on in the most of our higher institutions, but it is so well told, with such detailed attention to the actual situation and the actual course of events at Columbia, that it carries with it all the vividness of a personal history. And Columbia be-

ing what it is to-day, no student of our educational tendencies or of university affairs will be willing to leave it unread.

The account of the professional schools and affiliated colleges of the University, and of the University library, to which the rest of the volume is devoted, is interesting and valuable from many points of view. It is various in mode of treatment and literary style. The chapter on the School of Architecture reads like an intimate family history, and gives withal some insight into that movement in the teaching of Architecture at Columbia, thru which the emphasis has been shifted from the side of science to that of art, from construction to design. Professor Trent's account of Barnard College is highly interesting. Dr. Canfield's sketch of the earlier history of the library is a valuable contribution to library literature. The later portion of the same story is unfortunately compressed into a chronicle. The history of the schools of Law and Medicine throws much light on the development of the two professions concerned. The artistic unity of the whole work is heightened and its academic significance is emphasized by the reference to the central university movement which runs thru these supplemental histories. Of the School of Medicine it is said: "It has been spurred on to greater achievements by contact with the other schools of the University, and by a realization of the true university spirit. A university aims, not merely to transmit, but to augment knowledge, and this aim permeates the present school of Medicine."

ELMER ELLSWORTH BROWN

UNIVERSITY OF CALIFORNIA

The philosophy of education—By HERMAN HARRELL HORNE, Ph. D., assistant professor of philosophy and pedagogy in Dartmouth College. New York: The Macmillan Company, 1904. xvii+295 p. $1.75 net.

Because of the apparent simplicity and generality of educational theory there has grown up in the last quarter of a century a body of educational literature, perhaps unsurpassed for tediousness in any other line of intellectual activity. In recent years, however, there have appeared several volumes, of which Professor Horne's *Philosophy of education* is one, which give us hope that in our time both the study and the literature of

education are to be transformed and made worthy of an interest having to do with the highest concerns of mankind and touching life on every side.

Whether a science of education is possible or not is simply a question of fact. Do the so-called educational phenomena come within experience in such a way that they may be definitely located and defined? In other words, are there educational facts to be isolated and observed, and can they be studied methodically? If so, a science and philosophy of education is possible. In a systematic and thorogoing treatment both the science and the philosophy would be included; the science dealing with the main features of the area which the subject comprises, the philosophy dealing with its boundaries or its place in the territories of knowledge. A science isolates in order to organize; a philosophy unifies in order to adjust and interpret. The science of education, in other words, has to do with the theory of education as isolated by itself; the philosophy, while presupposing the science, is the theory of the relations of education to other sciences and to the known world in general. Philosophy aims to combine the analytic movement of science and the synthetic impulse of art in one intellectual endeavor. In such a process the science inevitably undergoes partial transformation and reconstruction. At the present time, owing to the fact that education draws its materials from so many sciences, and owing to the remarkable development of these sciences in recent years, there has resulted a species of intellectual anarchy in educational theory. The single science, by itself, is frankly individualistic, and only unconsciously organic at best. On the one hand, the psychologist with educational leanings is apt to assert that his special discipline is the sole arbiter in educational theory; in other words, that educational theory, in so far as it can be made scientific, is simply "applied psychology." The sociologist, on the other hand, whenever his inclination takes a practical turn, is equally determined that education shall become a part of the more comprehensive science of society. It is not a question, however, of identity, or of subordination, but of co-operative and complementary service. The worker in the philosophy of education must accept with gratitude the aspects of truth

brought to light by the sciences which it presupposes. He must be mindful, moreover, that it is not in its positive contribution to human knowledge, but rather in the organization and interpretation of that knowledge, that the true justification of philosophic inquiry consists. With the advance of the sciences which his inquiries presuppose his task still remains imperative,—to regulate the proportion that the contributions of the different sciences may assume, to co-ordinate and interpret the new materials, to unify them not only with one another, but with the other aspects of man's experience, and thus to restore to him a view of the educational process as a whole which is comprehensive, articulated, and wherein the different factors have free play.

This is essentially the problem which Professor Horne has set before himself in the present volume,—to exhibit the educational process in its organic wholeness. In an introductory chapter the author finds that education may be discussed from a fivefold point of view, corresponding to the five aspects of the process: (1) the biological, (2) the physiological, (3) the sociological, (4) the psychological, (5) the philosophical. The chapters in which these various aspects are discussed become a search for an adequate definition of the educational process, the theory of its place and function in human experience. Beginning with the doctrine of evolution as the largest generalization yet made in scientific views of the world, the author maintains as his first definition that education is the superior adjustment of a conscious human being to his environment. As the movement of thought advances thru the various chapters this definition is gradually interpreted and transformed in the light of the knowledge which the various sciences cast upon the nature of man and of the philosophic doctrine of Idealism. Evolution and Idealism are thus, according to the author, the two foundations of educational theory. In the concluding chapter education becomes the eternal process of superior adjustment of the physically and mentally developed, free, conscious human being to God as manifested in the intellectual, emotional, and volitional environment of man.

The volume is not another manual of practice, but an inter-

pretation. The effort to be immediately practical is postponed in favor of a study of education in its relation to the general process of spiritual evolution. It is recognized that a certain skill in educational practice may be gained at the cost of growing insight into educational theory. Unless the teacher possesses some consistent view of the process as a whole his work must remain to some extent limited and impoverished. His activity cannot be on the highest plane, —doing with the full consciousness of the meaning of what he is doing. From what has been said it will be clear that readers will gain from Professor Horne's book not so much specific rules of educational procedure, but rather a certain attitude towards their work as a whole, a certain enlargement of outlook, a certain elevation of spirit. Thruout the volume there are evidenced a wide intellectual hospitality, a fine geniality of mind, a competency for the work in hand. Doubtless it will all have to be done over again. But this is said in praise, not in blame. With great clearness Professor Horne has indicated how the two controlling ideas in the science and philosophy of the present, evolution and idealism, have, in the facts of human education, a unique application. Starting with these facts and under the guidance of these principles, the author has shown that education, far from being an accidental or merely empirical affair, finds its aim and its method deep down in the very nature of the world.

JOHN ANGUS MACVANNEL

TEACHERS COLLEGE,
COLUMBIA UNIVERSITY

A broader elementary education—By J. P. GORDY. New York: Hinds & Noble. xxviii+304 p. $1.25.

This book includes a wide range of subjects, such as the presupposition of education, democracy and education, the end of education, the end of elementary education, child nature, course of study in primary grades, concentration and correlation, some ideas on general method, the grammar-school curriculum, some of the problems of public-school administration, departmental instruction in grammar schools, the educational

value of each of the several common-school studies, school management, the small high school.

These subjects show clearly the encyclopedic nature of the volume. The style is argumentative and at the same time dogmatic, the latter quality being due to lack of space, if to nothing else.

The title suggests a mind seriously dissatisfied with the prevailing trend of educational thought, and the text verifies this suspicion. Even in the preface the author declares, "The current theory inherited from Herbart, and by him from Rousseau, that everything should be made to depend on interest, that there should be no *must* in education, seems to the author thoroly pernicious," etc. The headings of some of the chapters indicate similar disapproval, tho not altogether without hope, as for example, Chapter IV, "The end of education as conceived by the Report of the Committee of Fifteen"; Chapter V, "The end of education as conceived by Mr. Herbert Spencer and Dr. Dewey"; Chapter VI, "The *true* end of education"; Chapter XVIII, "The fetich of general method."

But the way in which he finally disposes of Dr. Dewey on p. 43, shows perhaps most clearly the extent to which the blood of this reformer is boiling. "That a thinker of Dr. Dewey's ability should be reduced to such straits in order to use interest as the foundation of his philosophy of education, that he should confuse self in general with one's best self, and interest in general with interests that have an educational value, that he should misstate facts of universal experience by contending that whoever is interested in a given end is equally interested in the necessary means, is surely a cogent argument against his position."

Whether Dr. Dewey is suffering morally as well as intellectually is not fully stated in this paragraph, but it is at least plain that he is in a bad way. And since he, perhaps more conspicuously than any other man, represents modern educational thought, it is plain that reformers with the spirit of martyrs are now wanted in the field of education. The aggressive directness of Professor Gordy is refreshing, and the main faults I have to find with him are found in his premises and

arguments. For instance, when Herbart's elimination of the *must* in education so excites his ire, I cannot help but wonder if he has really formed a close acquaintance with that gentleman. In his pedagogical writings, edited by Willman, Vol. I, p. 357, Herbart says: "Threats, followed by force (zwang) in cases of need, supervision that shows familiarity with what may ordinarily be expected of children, authority together with love,—these means give fair assurance of the proper development of children." Again in Vol. II, p. 528, he says: "Mild and harsh measures are necessary in the control of children. . . One might hope to abandon corporal punishment entirely, if reprimands did not at times fail to be effective; but such punishment should be given so seldom, that it would be feared from a distance, rather than actually suffered. It doesn't harm a boy to remember that he once received an application of the rod, when a child." So many persons are putting up straw men in connection with this "Herbartian doctrine of interest" that it is well to remind them that Herbart did not confine himself to coddling children; he was quite willing to paddle them when they wouldn't otherwise mind.

As to Professor Gordy's arguments, I find myself unable to follow many of them. For example, I cannot understand how he gets Dr. Dewey so utterly confused within a very few pages, and I cannot help but feel that by some accident only a portion of the argument here and there, including the conclusions, got into print.

"The fetich of general method" as heading of Chapter XVIII, looks ominous; it seems as tho much, if not all, of what was written under that title, including the first two-thirds of this volume, is doomed to destruction. But it is not so bad. It is merely the principle of induction that is to be demolished, and the author offers a very forceful inductive argument proving that induction won't hold.

But only about one-third of the book is a polemic, and aside from fairly goring the red flag of Herbartianism now and then, the writer moves along in a sedate and reasonable manner. Indeed, he shows himself to be a good Herbartian on the whole, even on the doctrine of interest, and might well be classed in that group of men, even tho against his own will. On p. 110,

he declares, "So far as possible, the work of the school should be adapted to the child's interests. How adapted? In the sense that he shall be set doing things which he likes to do, things the doing of which takes him toward the goal of education. We must make the child, his tastes, his interests, the center of gravity," acknowledging this figure from Dr. Dewey. After thus experiencing conversion in the middle of his book, he seldom lapses, and evinces an admirable spirit in his discussions of the native characteristics of childhood, the end of elementary education, the elementary-school curriculum, and educational values; making some especially good statements about the worth of literature and manual training. Seldom can one find a better statement than the following in regard to the latter subject: "The man who has been trained by exclusively bookish methods is cut off from a large and significant part of the life of his fellows. He is like a man without an ear for music trying to listen to one of Beethoven's symphonies. As such a man hears only noise, as he perceives no harmony or melody, so the book-learned man stands outside the industrial life of the world. He hears descriptions of wireless telegraphy and typesetting machines, but he does not understand them. He has not the basal concepts which this comprehension requires and presupposes" (p. 152).

But, on the whole, this volume is too encyclopedic in aim to be of much value. It is both philosophical and practical in parts, but not scientific enough to be convincing. After having hurriedly carried the reader thru a large number of subjects, it leaves him with the feeling that the author is very excited or dyspeptic at times, and looking for a fight; that his conclusions surpass his data; but that he possesses many good ideas and mental keenness. It is only a pity that he did not attempt some specific task and carry it to completion in a scientific manner, thus accomplishing something that is really needed.

F. M. McMURRY

TEACHERS COLLEGE,
COLUMBIA UNIVERSITY

A scientific German reader—By GEORGE THEODORE DIPPOLD, Ph. D. *Revised edition.* Boston: Ginn & Company, 1904. liii+274 p. 75 cents.

The ability to read German is admittedly indispensable to the student of applied science who would keep abreast of the progress in his field. This ability the so-called Elementary Entrance requirement does not guarantee. The amount demanded, while a good beginning, is so small as to be—except in the case of the boy who does it with maximum excellence—almost useless for practical purposes, *i. e.*, the employment of the language as a tool, not as a medium of expression. It is precisely at this point that the development of his power begins and the student should, accordingly, have a one-year's course after admission, as required in the leading technological schools and in some universities.

How shall the study of German be made of practical value to the student of applied science? The foundation, of course, will not differ from that of the college student, but subsequent reading matter may be selected with reference to his particular need. Such differentiation is seldom possible in the secondary school, and this is a primary reason why the additional year of study should follow admission to the technical course. The standard of preparatory work, moreover, will be raised if the study is to be continued and so to be made of some ultimate value. At present the instruction in German is too often regarded as a useless superadded something, designed either to make up the required number of "points" or to give the boy a dash of "culture," and the pupil, if not the teacher, aims only at getting enough to "pass the paper." And why not, if that is to be the end of it?

Scientific German has a vocabulary and a construction by no means easy. While it is true that the vocabulary of any science can be learned from the dictionary, once the elements of the foreign language have been mastered, the student will be materially aided by a graded introduction to its difficulties. An excellent book for the purpose, particularly when such texts are taken up early in the course, is the *Scientific German reader* here reviewed. It was first published in 1895, but now appears in a revised and much improved form. Pages 1-119, including chapters on chemistry, physics, the steam-

engine, and geology, remain unchanged, but those on geometry and mineralogy have been omitted. Then follow chapters on anthropology, the thermometer, and the compass, and finally, added in this edition, a lecture on *Technical science and political economy,* delivered by Dr. Gustav Schmoller before the Society of German Engineers at Munich, in June, 1903. This is an able survey of the relations between technical scientific progress and cultural conditions, and must be considered a very happy addition.

The most important change in the revised edition is the inclusion of the first four chapters from Oswald's *Die Schule der Chemie,* 1903, in which the instruction is conveyed by means of a dialogue between professor and student. This dialogue is exceedingly well managed, the language is simple but not puerile, the explanations are clever and lucid, and the student will not be bored even if he knows his chemistry. The editor has provided this section of the *Reader,* p. ix-xliv, with copious foot-notes, to aid the learner in translation, and occasional grammatical questions which show the experience of the classroom. He believes that " these new selections can be taken up advantageously by students who have studied German but two or three months," Part II being " intended for those who have taken a thoro course in German grammar for at least one year." Part I will thus serve admirably to alternate with texts of a more general character in the earlier stages of the course. To this section of the *Reader* is added a series of easy exercises, p. xlv-liii, for translation into German. The sentences are based closely on the text and are very well adapted to review at once the elements of grammar and the special vocabulary. There is likewise a set of exercises following Part II and consisting of brief extracts from standard scientific works in English. The utility of such composition practice is doubtful, the language being of necessity very technical and the style involved. At this stage the student no longer needs mechanical drill and might better spend his time in reading more German.

It is the opinion of the reviewer that the usefulness of this excellent book would be increased by the addition of a vocabulary, or at least a glossary of technical terms. The latter

would considerably reduce the number of notes and would be extremely convenient for reference. It is a mistake to suppose that the use of a dictionary, as the average elementary student *actually uses* it, is an aid to rapid progress. Nor is it to be forgotten what *kind* of dictionary such a student is likely to depend upon. The shortest way is sometimes the best.

The *Reader* is finely printed, in Roman type thruout, the new selections of this edition according to the present standard orthography, the other pieces remaining unchanged. A commendable feature is the introduction of occasional illustrations, which are a useful adjunct to the definitions and descriptions in the text.

WILLIAM ADDISON HERVEY

COLUMBIA UNIVERSITY

VIII

NOTES AND NEWS

The Meeting of the National Educational Association

The issuance by Secretary Shepard of the program bulletin for the meeting of the National Educational Association to be held at Asbury Park and Ocean Grove, New Jersey, on July 3-7 next, makes it possible to say with confidence that the meeting will be an extraordinary one. The program of the general session prepared by President Maxwell contains the names of some of the most genuine leaders of thought and action in the country, and they are to present topics of practical interest and value. That the Association will give a great reception to President Roosevelt on the afternoon of Friday, July 7, goes without saying.

The department programs are also unusually good, particularly those for the departments of secondary and higher education.

At the conclusion of the meeting, arrangements have been made for the visiting teachers to spend several days in New York City to great advantage and at low cost.

Among the scholars who have recently died, from whom much was hoped and who could ill be spared, are Paul Tannery, whose books on the history of the sciences—especially on the history of the sciences in Greece—were of great value; and Edward J. Payne, of Magdalen College, Oxford, whose history of the *New world, called America,* is as interesting in its point of view as it is scholarly and careful in its execution.